GOVERNMENT OF GHANA

Ministry of Sanitation and Water Resources

National Water Policy

April 2024

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This policy document was developed by the Ministry of Sanitation and Water Resources with the involvement of all WASH Sector Stakeholders

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The development of this policy document is the result of sector-wide stakeholder consultations and collaboration involving water practitioners, policy formulators, decision makers, allied Ministries, Departments, Agencies as well as Metropolitan, Municipal, and District Assemblies, Development Partners, and Civil Society and Non-Governmental Organisations.

The Ministry wishes to express its sincere appreciation for all that have contributed in varied ways to the realisation of this document.

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FOREWORD

The importance of water to the existence of humans and other living things cannot be overemphasised. However, in recent times, urbanisation, industrialisation, climate change and human activities (illegal mining, sand winning, deforestation and depletion of buffer zones) have threatened Ghana's water resources and the ability of key sector agencies to supply safe water in sufficient quantities and of good quality to the populace.

In 2007, under the auspices of the then Ministry of Water Resources, Works and Housing, a National Water Policy (NWP) was prepared as an update of the 2002 draft Ghana Water Policy. Up until now, the NWP (2007) has served as the blueprint for the implementation of policy actions in water resources management, urban water and the community water and sanitation sub-sectors. However, after over 15 years of implementing the NWP (2007), it has become necessary to revise it to reflect current global, regional and national discourse on water use and water resources management. The revised policy is inspired by the principles of 'leaving no one behind' as espoused in the National Medium-Term Development Framework; Coordinated Programme of Economic and Social Development Policies (CPESDP) (2021-2025), the Sustainable Development Goals (SDGs 2015-2030) and the Africa Agenda 2063. It also aligns with various international cooperation agreements on water resources that have been ratified by Ghana. The policy has an overall goal of ensuring the efficient utilisation and management of available water resources and enabling equitable access to sustainable, safely managed and affordable water for all. The revised NWP (2024) recognises access to water as a 'basic human right' and as a resource, which is critical for achieving equitable socio-economic development.

The revised policy is the outcome of nation-wide stakeholder consultations. The revised policy contains sections on (i) water resources management; (ii) urban water services and (iii) community water services; it also highlights the legal framework for the domestic and trans-boundary utilisation of water resources.

It is expected that all stakeholders, at all levels shall be guided by the principles and provisions in the revised NWP and provide the needed support for its effective implementation to ensure the attainment of Government's agenda of 'Water for All'.

I wish to take this opportunity to thank Hon. Cecilia Abena Dapaah and Hon. Freda Akosua Prempeh (MP) as well as all stakeholders whose tireless efforts contributed to the development of this document.

Hon. Lydia Seyram Alhassan, MP
Minister
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Table of Contents

ACKNOWLEDGEMENTS ..... **II**
FOREWORD ..... **III**
LIST OF ABBREVIATIONS ..... **VII**

1. INTRODUCTION AND POLICY CONTEXT **1**
1.1 OVERVIEW 1
1.2 POLICY REVISION 2
1.3 DEVELOPMENT CONTEXT 3
1.3.1 SUSTAINABLE DEVELOPMENT GOALS (SDGS) 3
1.3.2 AFRICA AGENDA 2063 4
1.3.3 COORDINATED PROGRAMME OF ECONOMIC AND SOCIAL DEVELOPMENT POLICIES (CPESDP) (2021-2025) 4
1.4 GHANA'S WATER RESOURCE POTENTIAL 5
1.4.1 SURFACE WATER RESOURCES 5
1.4.2 GROUNDWATER RESOURCES 6
1.4.3 RAW WATER QUALITY 6
1.4.4 RAINWATER 7
1.5 UTILISATION OF WATER 7
1.5.1 CONSUMPTIVE USE 7
1.5.2 NON-CONSUMPTIVE USES 7
1.6 WATER STORAGE 8
1.7 OBLIGATIONS AND AGREEMENTS 9

2. STRATEGIC ACTIONS OF THE POLICY **10**
2.1 GUIDING PRINCIPLES 10
2.2 OVERALL GOAL 11
2.3 WATER RESOURCES MANAGEMENT 11
2.3.1 OVERVIEW 11
2.3.2 FOCUS AREA 1: INTEGRATED WATER RESOURCES MANAGEMENT (IWRM) 12
2.3.3 FOCUS AREA 2: ACCESS TO WATER RESOURCES 13
2.3.4 FOCUS AREA 3: WATER FOR DOMESTIC SUPPLY 14
2.3.5 FOCUS AREA 4: WATER FOR FOOD SECURITY 14
2.3.6 FOCUS AREA 5: WATER FOR ENERGY, INDUSTRY, MINING AND OTHER USES 15
2.3.7 FOCUS AREA 6: WATER FOR ECOSYSTEM AND ENVIRONMENTAL SUSTAINABILITY 16
2.3.8 FOCUS AREA 7: FINANCING 17
2.3.9 FOCUS AREA 8: CLIMATE VARIABILITY AND CHANGE 17
2.3.10 FOCUS AREA 9: CAPACITY BUILDING 18
2.3.11 FOCUS AREA 10: PUBLIC AWARENESS CREATION 19
2.3.12 FOCUS AREA 11: GOOD GOVERNANCE 20
2.3.13 FOCUS AREA 12: DATA MANAGEMENT AND RESEARCH 21
2.3.14 FOCUS AREA 13: INTERNATIONAL COOPERATION 22

2.4 URBAN WATER SERVICES 23
2.4.1 OVERVIEW 23
2.4.2 FOCUS AREA 1: WATER SOURCES 24
2.4.3 FOCUS AREA 2: IMPROVING URBAN WATER SERVICES 24
2.4.4 FOCUS AREA 3: FINANCE 25
2.4.5 FOCUS AREA 4: PUBLIC PRIVATE PARTNERSHIPS 26
2.4.6 FOCUS AREA 5: CAPACITY BUILDING 27
2.4.7 FOCUS AREA 6: GOOD GOVERNANCE 27
2.4.8 FOCUS AREA 7: RESEARCH AND DEVELOPMENT 28
2.4.9 FOCUS AREA 8: MONITORING AND EVALUATION 28
2.4.10 FOCUS AREA 9: EMERGENCY AND EXTREME EVENTS 29
2.4.11 FOCUS AREA 10: EQUITY AND INCLUSION (PRO-POOR ISSUES) 29
2.4.12 FOCUS AREA 11: WATER SAFETY 30
2.4.13 FOCUS AREA 12: CONSUMER INTEREST/EDUCATION 31
2.5 COMMUNITY WATER SERVICES 31
2.5.1 OVERVIEW 31
2.5.2 FOCUS AREA 1: ACCESS TO SAFE WATER 33
2.5.3 FOCUS AREA 2: DELIVERY OF WATER SERVICES 34
2.5.4 FOCUS AREA 3: FINANCE 35
2.5.5 FOCUS AREA 4: HYGIENE EDUCATION/PROMOTION 35
2.5.6 FOCUS AREA 5: PUBLIC PRIVATE PARTNERSHIPS (PPPs) 36
2.5.7 FOCUS AREA 6: CAPACITY BUILDING 37
2.5.8 FOCUS AREA 7: GENDER MAINSTREAMING AND GOOD GOVERNANCE 37
2.5.9 FOCUS AREA 8: RESEARCH, INNOVATION AND LEARNING 38
2.5.10 FOCUS AREA 9: OPERATION AND MAINTENANCE (O&M) 39
2.5.11 FOCUS AREA 10: MONITORING AND EVALUATION 39
2.5.12 FOCUS AREA 11: EQUITY AND INCLUSION 40
2.5.13 FOCUS AREA 12: WATER SAFETY 41

3. INSTITUTIONAL ARRANGEMENTS FOR POLICY IMPLEMENTATION 42
3.1 OVERVIEW OF KEY WATER SECTOR INSTITUTIONS 42
3.1.1 MINISTRY OF SANITATION AND WATER RESOURCES 42
3.1.2 WATER RESOURCES COMMISSION (WRC) 43
3.1.3 GHANA WATER LIMITED (GWL) 43
3.1.4 COMMUNITY WATER AND SANITATION AGENCY (CWSA) 43
3.1.5 PUBLIC UTILITIES REGULATORY COMMISSION 44
3.2 FUNCTIONS OF ALLIED SECTOR MINISTRIES AND AGENCIES 44
3.3 LEGAL AND REGULATORY FRAMEWORK 47
3.3.1 LEGAL FRAMEWORK 47
3.3.2 REGULATORY FRAMEWORKS 48
3.4 INTERFACING ISSUES 50

3.5 COORDINATION AND COLLABORATION 51
3.6 INTER-MINISTERIAL COLLABORATION FOR WASH SERVICES 51
3.7 POLICY REVIEW 52

DEFINITION OF TERMS 53

LIST OF ABBREVIATIONS

BOT	Build Operate Transfer
BOOT	Build Own Operate and Transfer
COM	Community Ownership and Management
CPESD	Coordinated Programme of Economic and Social Development Policies
CSIR	Council for Scientific and Industrial Research
CSOs	Civil Society Organisations
CWSA	Community Water and Sanitation Agency
DA	District Assembly
DiMES	District Monitoring and Evaluation System
DPs	Development Partners
DPCUs	District Planning Coordinating Units
DWDs	District Works Departments
EPA	Environmental Protection Agency
GIDA	Ghana Irrigation Development Authority
GSA	Ghana Standards Authority
GWL	Ghana Water Limited
L.I.	Legislative Instrument
LICSD	Low-Income Customer Support Department
MDAs	Ministries, Departments and Agencies
MDGs	Millennium Development Goals
M&E	Monitoring and Evaluation
MLGDRD	Ministry of Local Government, Decentralisation and Rural Development
MoF	Ministry of Finance
MSWR	Ministry of Sanitation and Water Resources
MTDPs	Medium-Term Development Plans
NCWSP	National Community Water and Sanitation Programme
NDPC	National Development Planning Commission
NGOs	Non-Governmental Organisations
NWP	National Water Policy
OHLGS	Office of Head of Local Government Service
O&M	Operation and Maintenance
PPPs	Public Private Partnerships
PURC	Public Utilities Regulatory Commission
PWDs	Persons with Disabilities
RBBs	River Basin Boards
RCCs	Regional Coordinating Councils
RPCUs	Regional Planning Coordinating Units
ROT	Rehabilitate Operate and Transfer
SEA	Strategic Environmental Assessment
SDGs	Sustainable Development Goals
SIGA	State Interest and Governance Authority
SIP	Strategic Investment Plan
SIS	Sector Information System
VLTC	Volta Lake Transport Company
VRA	Volta River Authority
WRM	Water Resources Management
WASH	Water, Sanitation and Hygiene
WRC	Water Resources Commission
WSMS	Water System Management Staff
WSMTs	Water and Sanitation Management Teams
WSSWG	Water and Sanitation Sector Working Group

1. INTRODUCTION AND POLICY CONTEXT

1.1 OVERVIEW

Water is key to the existence, growth and development of all living things on earth. Access to safe water and the sustainable management of water resources is essential to all aspects of human life as it directly impacts food production, health outcomes, including child morbidity and mortality, sanitation and hygiene as well as the development of women and girls. It is no wonder that water is linked to the attainment of all the Sustainable Development Goals (SDGs). Aside from sustaining human livelihood, water is also essential to industrial development, manufacturing, transportation, tourism and energy.

However, increasing population growth, physical development as a result of rapid urbanisation and industrialisation have resulted in the depletion of water resources. Further to this is the global issue of climate variability and change as well as the activities of illegal miners and sand winners that are leading to further decline of both the quantity and quality of water resources and thereby threatening water security.

Ghana's National Water Policy (revised 2024) is a framework formulated to guide the sustainable use, management and planning of water resources for drinking and other domestic uses. It is targeted at water users, water managers and practitioners, investors, decision makers and policy makers within central and local government structures, non-governmental organisations (NGOs) and international development agencies. The revised policy (2024) also recognises the various cross-sectoral opportunities and challenges related to water use and its links with other relevant sectoral policies such as those on sanitation, agriculture, transport and energy.

The policy is divided into three (3) sections:

Section 1 presents an overview of Ghana's water sector comprising the state of water resources, development context and international obligations for water resources management (WRM).

Section 2 details the guiding principles that form the basis for the formulation of the policy, issues related to the challenges confronting water resources development in the three (3) sub-sectors namely WRM, urban water supply and community water services. It also entails the policy objectives and measures for addressing the challenges in each of the focus areas.

Section 3 outlines guidelines for implementing the policy including institutional roles and responsibilities, legal framework, standards, regulations, interfacing and coordination issues.

1.2 POLICY REVISION

In 2007, under the auspices of the then Ministry of Water Resources, Works and Housing, a National Water Policy (NWP) was prepared as an update of the 2002 draft Ghana Water Policy. In January 2017, the Ministry of Sanitation and Water Resources (MSWR) was established as the lead policy formulation institution to spearhead policy formulation and coordination efforts to enhance the water and sanitation sector. In 2019, MSWR initiated the process to revise the 2007 NWP to reflect the current global focus in the WASH sector as well as emerging issues in Ghana's water and sanitation sector.

The policy has been revised based on:

- key issues emanating from the SDGs (2015-2030), Africa Agenda 2063, Coordinated Programme of Economic and Social Development Policies (CPESDP) (2021-2025) as well as Ghana's commitment to international obligations and protocols and to the broad guiding principles of water management. The revised policy also rolls over strategies and actions from the 2007 NWP, particularly those that were not implemented, sustained or have not yielded the desired results.
- a series of consultations at the national level and zonal workshops[1] held with stakeholders that included members of the Parliamentary Select Committee on Works and Housing, Ministries, Departments and Agencies (MDAs), sector agencies, Regional Coordinating Councils (RCCs), District Assemblies (DAs)[2] and Civil Society Organisations/NGOs. The consultations sought to secure the involvement of all key stakeholders in the policy revision process.
- conducting a national workshop to validate the draft revised policy.

Incorporation of Strategic Environmental Assessment (SEA) Principles

As part of the revision process, the consultant held discussions with officials of the Environmental Protection Agency (EPA) who presented the following preliminary observations:

- limited time input for SEA activities in the revision of the policy
- absence of detailed discussions with a wide range of stakeholders on the integration of SEA principles into the revision process
- absence of the adoption of either an integrated or parallel SEA approach to the policy revision process[3]

1. Workshops were organised in three (3) zones: Southern, Middle and Northern Zones
2. 'District Assembly' includes Metropolitan and Municipal Assemblies
3. On account of this, the Ministry of Sanitation and Water Resources is to subject the Draft Revised Policy to an ex-post SEA in order to mainstream environmental issues into the document.

1.3 DEVELOPMENT CONTEXT

The revised NWP has been developed in line with current national, regional and global goals, strategies and agreements such as CPESDP (2021-2025), Africa Agenda 2063 and the SDGs.

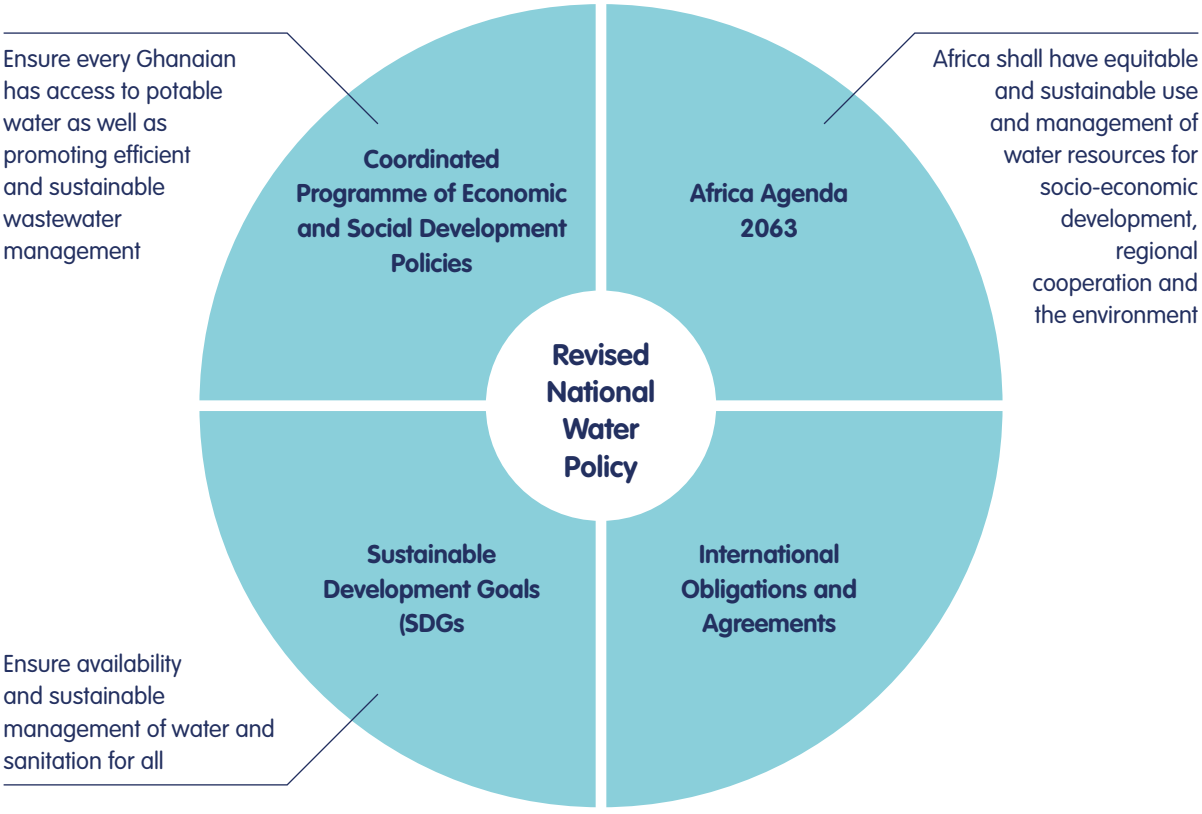


FIGURE 1: DEVELOPMENT CONTEXT

The CPESDP (2021-2025) which outlines Ghana's current growth and development agenda is ultimately underpinned by the 1992 Constitution of the Republic of Ghana as well as the country's commitments to key international and regional obligations such as the SDGs (2015-2030) and the Africa Agenda 2063 respectively. In all the aforementioned strategies, water, its use and management are necessary factors for human development and its linkages with other development priorities is duly recognised.

1.3.1 SUSTAINABLE DEVELOPMENT GOALS (SDGS)

The SDGs which were launched in 2015 are a set of goals aimed at addressing urgent global challenges up to 2030. The SDG agenda, which Ghana has adopted, sets the stage for ensuring sustainable economic and social progress worldwide through the integration of economic, social and environmental considerations. This implores governments to take holistic steps towards ensuring development that benefit current generations without depriving future generations of the opportunity to enjoy same. At the heart of these goals is the principle of 'leaving no one behind' which implies 'commitments to eradicate poverty in all its forms, end discrimination and

exclusion and reduce the inequalities and vulnerabilities that leave people behind and undermine the potential of individuals and of humanity as a whole'[4].

Goal 6 of the SDGs is focused on ensuring the 'availability and sustainable management of water and sanitation for all'. The goal specifically intends to close the widening gaps of inequality towards achieving access to safe water and sanitation in an inclusive manner. The indicators for measuring progress of SDG 6[5] in relation to water are:

- Proportion of population using safely managed drinking water services
- Proportion of population using safely managed sanitation services, including a hand washing facility with soap and water
- Proportion of domestic and industrial wastewater flow safely treated
- Proportion of bodies of water with good ambient water quality
- Change in water use efficiency over time
- Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
- Degree of integrated water resources management implementation (0-100)
- Proportion of transboundary basin area with an operational arrangement for water cooperation
- Change in the extent of water-related ecosystems over time
- Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan
- Proportion of local administrative units with established and operational policies and procedures for local community participation in water and sanitation management

Efforts to achieve these targets would require the pursuit of appropriate policies backed with adequate financial and human resources.

1.3.2 AFRICA AGENDA 2063

The long-term vision of the African continent has been outlined in the Africa Agenda 2063. There are seven (7) aspirations within this agenda that Africa seeks to achieve. The first aspiration is to have a prosperous Africa based on inclusive growth and sustainable development. One of the key indicators within this aspiration is that 'Africa shall have equitable and sustainable use and management of water resources for socio-economic development, regional cooperation and the environment'. In line with SDG 6, this aspiration recognises the provision of clean water and sanitation for all.

1.3.3 COORDINATED PROGRAMME OF ECONOMIC AND SOCIAL DEVELOPMENT POLICIES (CPESDP) (2021-2025)

The CPESDP (2021-2025) outlines government's vision of developing 'an optimistic, self-confident and prosperous nation, through the creative exploitation of our human and natural resources and operating within a democratic, open and fair society in which mutual trust and economic opportunities exist for all'. The programme is designed based on five main pillars namely (i) economic development; (ii) social development; (iii) environment, infrastructure and human settlements; (iv) governance, corruption and social accountability; and (v) Ghana's role in international affairs.

4. UN Sustainable Development Group (2021) 'Principle Two: Leave No One Behind': unsdg.un.org/2030-agenda/universal-values/leave-no-one-behind
5. Ghana has developed the WASH Golden Indicators and modified the targets based on the SDGs.

Water and sanitation is a priority area under the 'Social Development' and 'Environment, Infrastructure and Human Settlements' pillars of the CPESDP (2021-2025). The programme seeks to improve access to water for all through mechanisms such as providing mechanised boreholes and small-town water systems, sustainable financing of operation and maintenance of water supply services, improving water production and distribution systems, increasing water services in urban communities and implementing public private partnerships as an alternative source of funding for water services delivery.

As part of government's flagship programmes and in line with SDG 6, the government is also implementing a 'Water for All' programme which seeks to 'ensure that every Ghanaian has access to potable water'. In order to achieve its objective, the programme seeks to make significant investments in new water supply systems as well as rehabilitation and expansion of existing ones and ensure private sector investments in the provision and management of improved water supply systems especially in urban areas.

Under WRM, the CPESDP recognises the need to enforce legal and regulatory instruments which ensure efficient water use as well as the integration of water resources planning in national and sub-national development planning. Activities to improve WRM include creation of buffers, control and regulation of human activities along the banks of major water bodies and their tributaries, providing security towards the protection of water bodies especially those around major water treatment plants and the rolling out of a 'Clean Rivers Programme' countrywide. It also aims at strengthening the regulatory regime for small-scale mining, improving liquid and solid waste management thereby decreasing the discharge of wastewater into water bodies.

1.4 GHANA'S WATER RESOURCE POTENTIAL

Ghana's water resource potential[6] is divided into surface and groundwater resources.

1.4.1 SURFACE WATER RESOURCES

Surface water resources are mainly from three river systems that drain Ghana, namely: the Volta (which is made up of the Red, Black, White and Lower Volta Rivers and the Oti River), South-Western (made up of the Bia, Tano, Ankobra and Pra rivers) and Coastal (Tordzie/Aka, Densu, Ayensu, Ochi-Nakwa and Ochi-Amissah) basin systems. These river systems cover 70%, 22% and 8% respectively of Ghana's total land area. Apart from the above-mentioned, the only other significant freshwater source in Ghana is a meteorite crater lake, Lake Bosomtwe which is located in the forest zone about 30km from Kumasi, with a surface area of about 49km^2 and an average depth of 4.5m. Although surface water resources are enough, they are not uniformly distributed within the country as the south-western part (rain forest zone) is better watered than the coastal and northern regions (savannah zones).

Ghana shares the majority of her water resources (notably Rivers Bia, Tano, Volta and Tordzie/Aka) with five (5) countries in the sub-region, namely Burkina Faso, Côte d'Ivoire, Togo, Benin and Mali. About 22.9 billon m^3 (43.1%) of the total actual renewable water resources originate from outside of Ghana's international borders. Hence, effective collaboration with these countries to ensure the judicious use and conservation of these shared transboundary water courses cannot be underestimated.

6. The information presented in this section is culled from the National Infrastructure Plan (2017) and the website of the Water Resources Commission https://www.wrc-gh.org/?url=/

The mean annual runoff ranges from 51 to 93 m^3/s, representing about 69% of rainfall. The Volta, South-Western and Coastal systems contribute 65%, 29% and 6%, respectively of this runoff. The runoffs are also characterised by wide disparities between the wet season and dry season flows. The total actual renewable freshwater resources are estimated to be 53.2 billion m^3/yr, of which 30.3 billion m^3/yr are generated internally with the Volta, south-western and coastal river systems draining 70%, 22% and 8%, respectively. A key concern requiring appropriate hydrological data is the development of urban drainage in our major cities, for which flood and storm runoff data is needed to ensure proper planning and design of drainage systems.

1.4.2 GROUNDWATER RESOURCES

Ghana's groundwater resources occur in three main geological formations, namely the basement complex (comprising crystalline igneous and metamorphic rocks), the consolidated sedimentary formations underlying the Volta basin (including the limestone horizon) and the mesozoic and cenozoic sedimentary rocks. These formations cover 54%, 45% and 1% of the country respectively. The depth of aquifers in the basement complex and the Volta basin are normally between 10m to 60m with yields rarely exceeding $6m^3/h$. The mesozoic and cenozoic formations that typically form in the extreme south-eastern and western parts of the country have an aquifer depth of between 6m and 120m. Groundwater which occurs in limestone aquifers is much deeper and the limestone aquifers have a higher yield than the other formations as they go to depths of 120m to 300m with an average yield of $180m^3/hr$. Recharge of all aquifer systems is usually in the form of direct infiltration of precipitation through fracture and fault zones along the highland fronts and also through the sandy portions of the weathered zone. Additional recharge occurs through seepage from ephemeral stream channels during the rainy season.

The occurrence of groundwater is primarily controlled by the local geology and other factors such as topography and climate. In northern Ghana, aquifers have been located between 10m and 150m deep whereas borehole depths in southern Ghana range between 25 and 90m with an average of 42m. The average yield of groundwater in Ghana is recorded to be between 6-180 m^3/hr. Although groundwater resources are currently being used for domestic water supply, agricultural (irrigation and livestock watering) and manufacturing purposes (including water bottling), it is envisaged that the present production would not have any significant impact on the groundwater resource potential since these activities account for only 5% of the average annual groundwater recharge in most of the basins.

1.4.3 RAW WATER QUALITY

Generally, Ghana's surface and ground water resources are of good quality. However, in some mining areas, high levels of arsenic and cyanide have been found in both ground and surface water sources. Mining activities also affect the total suspended solids and turbidity of water (from erosion and sedimentation).

With respect to surface water, localised activities such as illegal mining, sand winning, agricultural activities and the discharge of untreated waste materials from domestic and industrial activities are causing pollution of most of our rivers and lagoons.

The natural occurrences of iron and fluoride in some groundwater resources in the Eastern, Greater-Accra, Central, Ashanti, Volta, Western, Western-North and the five (5) regions in Northern Ghana are affecting the yield and quality of boreholes drilled in these areas. There are challenges regarding salinity and some cases of natural pollution from local geological materials in certain areas causing high levels of iron, fluoride and other minerals in the coastal aquifers.

1.4.4 RAINWATER

The annual average rainfall is about 1,200mm/year (283.1km^3), varying from 800mm/yr in the coastal savannah zone to 2,200mm/yr in the south-western tropical rainforest. The annual potential for open water evaporation is estimated to be between 1,350mm in the south to about 2,000mm in the north. Although the effects of climate change, climate variability, rapid population growth, environmental degradation, pollution of rivers and draining of wetlands have significantly affected the pattern and volumes of rainwater realised, appropriate technologies and incentives for rainwater harvesting can become a useful tool for water conservation. Rainwater harvesting techniques when properly instituted and efficiently utilised, have the potential of reducing water scarcity especially during the dry season as often experienced in the northern parts of Ghana. Effective rainwater harvesting in homes and institutions could contribute to the reduction in the incidence of flooding during the wet season as well as afford households and institutions alternatives to water supply. This could reduce the demand for safe water for activities such as irrigation, cleaning, toilet flushing, livestock watering and firefighting and eventually lead to the conservation of water resources.

The Ghana Building Code GS1207 of 2018 strongly recommends households/institutions to include rainwater-harvesting technologies in their building plans. Rainwater harvesting should be seen as a useful tool in climate change adaptation.

1.5 UTILISATION OF WATER

1.5.1 CONSUMPTIVE USE

The main consumptive uses of water in Ghana are agriculture (irrigation, aquaculture and livestock watering), water supply (domestic and industrial) and mining. Water supply in urban areas for domestic and industrial purposes is mostly obtained from surface water sources through dams and rivers. However, in the case of water supply in rural areas and small towns, groundwater is the main resource. On the basis of surface water resources alone, the consumptive water demand for 2020 was estimated at 5 billion m^3, which is equivalent to only some 13% of the total surface water resources. This implies that with appropriate management and regulation, Ghana has enough surface water resources to meet current and future demand. However, the activities of illegal miners, sand winners, industries and agriculture are increasingly affecting the availability and quality of surface water and threatening the sustainable use of the resource. Coupled with this is the inadequacy of reliable data on water quality that is key to the proper development, management and protection of both ground and surface water resources.

1.5.2 NON-CONSUMPTIVE USES

The main non-consumptive uses are inland fisheries and aquaculture (cage), water transport, ecotourism (including boating) and hydropower generation. Impoundments and reservoirs have been constructed for hydropower generation and irrigation.

1.6 WATER STORAGE

There are about 24 large and medium reservoirs nationwide as well as over 2,000 small and micro reservoirs and ponds located mostly in the five northern regions and mainly used for domestic purposes, irrigation and livestock watering.

The first hydro-electric dam, constructed in 1965, is located 100km from the source of the Volta River. The dam created one of the largest man-made lakes in the world, covering an area of about 8,500km^2 at the full supply level of 88.5m and a water volume capacity of 148m^3. A smaller, shallower impoundment, the Kpong Head-pond, covering an area of about 40km^2, was created in 1981 when another hydro-electric dam was completed at Kpong, 20km downstream of Akosombo. The Bui hydro-electric dam is also located on the Black Volta which has a generation capacity of 400MW. Other notable impoundments are the Weija (supplying water in Accra), Owabi and Barekese (supplying water in Kumasi) dams on the Densu and Offin Rivers respectively. The Pwalugu multi-purpose dam which is currently under construction on the White Volta would have a total generating capacity of 60MW[7]. It is estimated that a potential dam facility on the Pra River, if developed, would have a total generating capacity of 125MW. Apart from the main non-consumptive uses, these impoundments are also used for irrigation.

Ghana's per capita water storage of 6,500m^3 is relatively higher in comparison with North America, Australia, Brazil and the rest of Africa with per capita water storage capacities of 6,000m^3, 4,800m^3, 400m^3, and 200m^3 respectively. However, the relatively high per capita water storage is entirely due to the huge volume of Lake Volta, which is primarily for power generation. Despite the potential of harnessing the volumes of water for other consumptive uses (agriculture, industrial, domestic water supply), very limited infrastructure has been developed on the lake for these purposes. The total water managed area is about 6,400ha representing the full or partially controlled irrigated area, as there is no reliable data relative to the existing wetlands and inland valley systems. Essentially, surface irrigation (using gravity, pumping or a combination of both) is practised on major irrigation schemes (5,800ha), while sprinkler irrigation is adopted for large, medium and small-scale irrigation schemes. Ghana's irrigation potential (estimated to be about 500,000ha) is very much undeveloped as the current area, which is actually irrigated, amounts to just about 4,000ha.

7. https://www.vra.com/about_us/projects.php

1.7 OBLIGATIONS AND AGREEMENTS

Ghana is a riparian state and shares a number of transboundary basins with countries in the sub-region. In this connection, Ghana is a signatory to a number of international laws, protocols, agreements and declarations that place obligations on the government in the management of water resources and the environment as well as the use of water resources particularly with other riparian countries. Some of these laws, protocols and agreements are:

- Convention on Fishing and Conservation of the Living Resources of the high seas
- Convention on Wetlands of International Importance Especially as Waterfowl Habitat: Ramsar Convention, 1971
- Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), 3rd September 1981
- United Nations Convention on the Law of the Sea, 7 June 1983
- Convention on the Rights of the Child, 2 September 1990
- 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes
- United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (1997 Watercourses Convention)
- International Covenant on Economic, Social and Cultural Rights, December 2000
- Ghana–Burkina Faso Joint Declaration on improved management of the natural resources of the Volta Basin, August 2002
- The Convention on the Status of the Volta River Basin and the establishment of the Volta Basin Authority, 2007
- Water Charter for the Volta River Basin, 2019

2. STRATEGIC ACTIONS OF THE POLICY

2.1 GUIDING PRINCIPLES

The following fundamental principles which have been developed in conformity with the CPESDP (2021-2025), the statutes of the Republic of Ghana and international cooperation agreements provide the basis for policy direction, sustainable management, development and use of water in Ghana.

1. The principle of the fundamental right of all people without discrimination to safe and adequate water to meet basic human needs.
2. The principle of meeting the social needs for water as a priority, while recognising the economic value of water and the goods and services it provides.
3. The principle of recognising water as a finite and vulnerable resource, given its multiple uses.
4. The principle of improving equity, gender and social inclusiveness.
5. The principle of integrating water resources management and development with environmental management in order to ensure the sustainability of ecosystem livelihood and water resources in both quantity and quality.
6. The precautionary principle that seeks to minimise activities that have the potential to negatively affect the integrity of all water resources.
7. The principle of coordinating and integrating water resource planning with land use planning.
8. The principle of adopting the river basin (or sub-basin) as a planning unit.
9. The principle of polluter pays, to serve as a disincentive to uncontrolled discharge of pollutants into the environment.
10. The principle of subsidiarity in order to ensure participatory decision-making at the lowest appropriate level in society.
11. The principle of solidarity, expressing profound human companionship for common problems related to water.
12. The principle that international cooperation is essential for sustainable development of shared river basins and aquifers.
13. The principle of integrating river basin management to reflect the relationship between freshwater and marine water in the coastal and wetland environment.
14. The principle of the greatest common good to society in prioritising competing uses of water.
15. The principle of promoting efficient and cost-effective use and reuse of water.

2.2 OVERALL GOAL

Consistent with the national development framework (CPESDP (2021-2025)), the overall goal of the revised National Water Policy is to ensure efficient utilisation and management of available water resources and enable equitable access to sustainable, safely managed and affordable water for all. The policy recognises water as a 'basic human right' in accordance with the UN General Assembly Resolution 64/292 (2010) and as a resource which is critical for achieving equitable socio-economic development.

The goal will be achieved by addressing issues under three (3) sub-sectors namely:

i. Water Resources Management
ii. Urban Water Services and
iii. Community Water Services

A number of focus areas under each of the sub-sectors have been identified. Within each focus area, challenges are listed followed by policy objectives and corresponding policy measures or actions.

2.3 WATER RESOURCES MANAGEMENT

2.3.1 OVERVIEW

Water is vital for life and a primary resource to all environmental, human and social processes. Water resources are embedded in all forms of development (e.g. food security, health promotion and poverty reduction), sustaining economic growth in agriculture, industry and energy generation, and maintaining healthy ecosystems. SDG 6 which urges countries to ensure the availability and sustainable management of water and sanitation for all, reflects the increased attention on water and sanitation issues in the global political agenda. It recognises that social development and economic prosperity depend on the sustainable management of freshwater resources and ecosystems, and it highlights the integrated nature of the SDGs.

As such, it is essential that issues of WRM are handled carefully and in a sustainable manner. Water resources are increasingly under pressure from population growth, rapid urbanisation and industrialisation, economic activities and competition for water among diversified users such as irrigation, hydropower generation, fisheries, industrial processes, ecosystem protection etc. These demands also exert greater impacts on the environment which further exacerbates water scarcity and often poor water quality. In addition, current concerns about climate variability and change require improved management of water resources.

Policies are therefore needed to protect both water quantity and quality and to provide mechanisms for using, developing and managing the water resources sustainably. The management of water resources will not only focus on its use but its conscious development in a manner that ensures long-term sustainability. The revised National Water Policy (2024) is aimed at striking an equitable balance between social, economic and environmental objectives rather than adopting a sectoral approach to WRM.

2.3.2 FOCUS AREA 1: INTEGRATED WATER RESOURCES MANAGEMENT (IWRM)

CHALLENGES

The main challenges in IWRM are:

i. ensuring that there is adequate water, both quantitatively and qualitatively, to restore and preserve the natural character and functions of eco-systems;
ii. ensuring that human activities do not adversely impact long-term availability of water resources;
iii. ensuring that the appropriate and nested institutional arrangements and human resources are available;
iv. inability to enforce rules and regulations pertaining to the sustainable management of water resources;
v. ensuring equity in access to water resources by its multiple users, notably by marginalised groups, to avoid or resolve conflicts;
vi. preparedness to climate variability and change through informed planning at various institutional levels;
vii. ensuring accountability of decisions made on WRM;
viii. responsive institutions for managing water resources both during periods of abundance and scarcity.

POLICY OBJECTIVES

The key policy objectives are to:

i. achieve coordinated development and management of water, land and related resources;
ii. ensure equitable and sustainable exploitation, utilisation and management of water resources, while maintaining ecosystem services including biodiversity and the quality of the environment for present and future generations;
iii. ensure adherence and compliance to policies, rules and regulations for the sustainable use, development and management of water resources;
iv. integrate the use of ICT solutions and spatial information for informed decision-making and planning of water resources.

POLICY MEASURES/ACTIONS

In order to meet the above objectives, Government will:

i. ensure water resources planning is a cross-cutting basic component of national development and economic planning;
ii. integrate and co-ordinate the development of multiple uses of water, including water supply, irrigation, hydro/combined cycle power generation and transportation;
iii. ensure the preparation and periodic review of national, basin and sub-basin IWRM plans and strategies and address climate change and variability;
iv. establish appropriate institutional structures and enhance capacity building at all levels;
v. ensure water resources planning takes account of "environmental flow" requirements and other ecosystem services at all levels;
vi. promote sustainable practices that avoid damage to critical natural capital and irreversible ecological processes;
vii. equip relevant institutions to administer their respective responsibilities and enforce the laws and regulations aimed at the sustainable development and management of water resources;
viii. promote partnerships between the public and private sectors for the protection and conservation of water resources through the use of cleaner and efficient technologies, effective waste management and sound land management and agricultural practices;
ix. ensure that the development and operations of irrigation and other water-related projects consider the specific needs of users, dependants of water resources and the ecosystem.
x. establish measures and processes to manage and resolve possible conflicts arising from the various uses and users of water at all levels.

2.3.3 FOCUS AREA 2: ACCESS TO WATER RESOURCES

CHALLENGES

The main challenges with regards to access to water resources are:

i. ensuring availability of quality water for all competing uses in all seasons;
ii. protecting water resources from destruction;
iii. providing adequate storage facilities for water use;
iv. ensuring equity and inclusive access to quality water for vulnerable groups of the population.

POLICY OBJECTIVES

The policy objectives are to:

i. ensure availability and access to adequate quantity of raw water (both surface and groundwater) in appreciable quality for drinking and other purposes;
ii. promote the sustainable conservation and utilisation of water resources through protection of water sources, efficiency in the use of water as well as control of wastage and pollution.

POLICY MEASURES/ACTIONS

In order to meet the above objectives, Government will:

i. ensure the development of water storage facilities to increase per capita water storage and reduce economic water stress;
ii. strengthen and ensure sustainability of management, operation and maintenance of water storage facilities in order to safeguard investments;
iii. ensure the participatory management and operations of small reservoirs to ensure equitable access to water, notably by marginalised groups and optimal water use;
iv. strengthen DAs to undertake key roles in supporting and enforcing the conservation of water resources and in maintaining the integrity of aquatic ecosystems;
v. promote partnership between the public and private sectors in the protection, conservation and management of our water resources;
vi. strengthen the involvement of government agencies, traditional authorities, communities among others for the safeguarding and conservation of water bodies;
vii. implement the 'polluter pays principle' for the restoration of water resources in the event of pollution and degradation.

2.3.4 FOCUS AREA 3: WATER FOR DOMESTIC SUPPLY

CHALLENGES

The main challenges with regards to water for domestic supply are:

i. ensuring availability of water for urban and rural domestic water supply at all times;
ii. destruction of vital water resources due to pollution and deforestation;
iii. ensuring gender mainstreaming and social inclusion.

POLICY OBJECTIVES

The policy objectives are to:

i. satisfy raw water supply requirements for domestic and institutional use, sanitation services and emergencies;
ii. ensure that domestic water requirements are given priority;
iii. enhance the management and development of water resources in a manner which, as a first priority, safeguards the interests of the entire population, particularly the poor, women and other vulnerable groups to have access to adequate water resources for multiple uses.

POLICY MEASURES/ACTIONS

To achieve the objectives, Government will:

i. promote the conjunctive use of surface and groundwater where appropriate;
ii. engage communities on participatory management practices to protect and secure water sources from destruction;
iii. ensure efficient use of water supply systems to reduce wastage of water resources and pollution;
iv. promote rainwater harvesting as an alternative source of water supply and ensure the enforcement of the provisions on rainwater harvesting in the Ghana Building Code GS1207 (2018) and intensify the implementation of activities and actions proposed in the National Rainwater Harvesting Strategy (2011);
v. promote the use of technology in water supply and distribution services;
vi. ensure that the development and operations of irrigation and other water-related projects consider the specific needs of users, dependants of water resources and the ecosystem.

2.3.5 FOCUS AREA 4: WATER FOR FOOD SECURITY

CHALLENGES

The main challenges with regards to water for food security are:

i. ensuring availability of water for agriculture, livestock and aquaculture to support food security in all seasons;
ii. increasing competing uses of land and water for other economic ventures and development;
iii. inadequate infrastructure for water storage and use;
iv. inefficient irrigation technologies that waste water resources;
v. farming along riverbanks without regard to the buffer zone policy and ecological integrity;
vi. limited data and dissemination of information (early warning systems, weather data, water resources and policies) for agricultural water management;
vii. non-point source pollution of rivers, lakes and other water bodies through the use of agrochemicals and aquaculture activities;
viii. good and inclusive governance to enhance equitable access for the population, with special attention on gender and the youth.

POLICY OBJECTIVES

The key objectives are to:

i. ensure availability of water in sufficient quantity and quality for cultivation of food crops, watering of livestock and sustainable freshwater fisheries to achieve sustainable food security for the country;
ii. ensure availability of water in sufficient quantity and quality to improve the functions of eco-systems to support food security;
iii. ensure appropriate and efficient dissemination of information for sustainable agricultural water management;
iv. encourage local and inclusive ownership of water for food security.

POLICY MEASURES/ACTIONS

Government will take the following measures/actions:

i. encourage the efficient use of agrochemicals and feedstock for aquaculture to reduce pollution of water bodies and ensure conservation of water;
ii. promote and encourage the use of efficient irrigation techniques and technologies and reduce transmission losses of water in irrigation systems;
iii. manage land use and control land degradation, including bush fires to reduce soil loss and siltation of water bodies;
iv. promote the efficient use of rainwater, soil moisture conservation and supplementary irrigation for farming;
v. promote the creation and maintenance of buffers along river bodies while up scaling riverine irrigation beyond buffers;
vi. promote innovative ways of disseminating requisite data and information to farming communities for improved productivity and preservation of the water resource.

2.3.6 FOCUS AREA 5: WATER FOR ENERGY, INDUSTRY, MINING AND OTHER USES

CHALLENGES

The challenges include:

i. ensuring availability of water in suitable quantity and quality for energy, industrial, commercial, mining operations and other non-consumptive uses including transport and recreation;
ii. ensuring the prevention of pollution of water resources and the environment from extractive and industrial activities;
iii. preserving water availability and integrity for transport and recreational uses in the development of water resources;
iv. balancing the competing demands of water among energy, mining, industry and other uses;
v. ensuring the thinking and practical application of the water-food-energy nexus.

POLICY OBJECTIVES

The key objectives are to:

i. ensure that hydropower and other energy development projects adhere to acceptable technical, environmental and safety regulations such as the Dam Safety Regulations L.I. 2236 (2016);
ii. prevent the pollution of water bodies through mining and industrial activities;
iii. ensure the availability of water for recreational purposes and water transport during water resources development;
iv. ensure that water-food-energy nexus thinking is applied.

POLICY MEASURES/ACTIONS

Government will take the following measures and actions:

i. subject hydropower development schemes to strict social and environmental impact assessments;
ii. ensure hydropower and other energy development plans meet current and future water availability in conjunction with other uses;
iii. ensure that proposed and existing dam projects comply with the Dam Safety Regulations L.I. 2236 (2016);
iv. facilitate availability of water resources and promote water use efficiency for industrial and commercial uses, as well as mining operations;
v. require industries, commercial and mining operations, to develop and implement pollution control measures as well as complying with related regulations to safeguard water resources;
vi. conserve and develop water resources to provide water for transport, wildlife and recreational activities;
vii. encourage recycling and reuse of water for all purposes;
viii. encourage multiple-use water systems.

2.3.7 FOCUS AREA 6: WATER FOR ECOSYSTEM AND ENVIRONMENTAL SUSTAINABILITY

CHALLENGES

The challenges related to water for the ecosystem include:

i. destruction of natural wetlands and recharge areas for groundwater resources;
ii. destruction of vital eco-systems for infrastructural and other developments;
iii. limited coordination between land use and water resources planning;
iv. limited engagement of communities on issues related to water for ecosystems.

POLICY OBJECTIVES

The policy objectives are to:

i. ensure availability of water in sufficient quantity and quality to maintain ecosystem functions to support livelihoods;
ii. prevent the destruction of ecosystems by mining activities, infrastructural and other development projects;
iii. safeguard vital ecosystems for the present and future;
iv. ensure community engagement on ecosystem discussions.

POLICY MEASURES/ACTIONS

To achieve the objectives, Government will:

i. promote nature-based solutions as central to WRM to improve water availability and quality, while reducing water-related risks;
ii. undertake environmental flow requirements in the planning, design and execution of all water-related development projects;
iii. enforce the effluent discharge standards and pollution control regulations to protect the natural water courses and ecosystems;
iv. develop appropriate inclusive water pollution prevention and control strategies;
v. improve the hydrogeological setting and management in Ghana, including groundwater recharge;
vi. ensure that the natural interaction between freshwater and seawater at the coast and surface and groundwater is respected and maintained to protect ecosystems, wetlands and related livelihoods;
vii. strengthen the coordination between water resources management and land-use planning to protect ecosystems and the environment.

2.3.8 FOCUS AREA 7: FINANCING

CHALLENGES

The main challenges are:

i. ensuring adequate and sustained funding for WRM;
ii. implementation of a cost structure which is viable whilst promoting equity to basic water requirements;
iii. acceptance of water as an economic good.

POLICY OBJECTIVES

The policy objectives are to:

i. ensure that adequate and sustained funding is available for the development and management of water resources to achieve the goal of making water available for all purposes;
ii. ensure the institutionalisation of appropriate fees and charges for water use and development;
iii. strike a good balance between water as an economic good and water as essential for life.

POLICY MEASURES/ACTIONS

To achieve the objectives, Government will:

i. implement revenue generation strategies, including expansion of water user base; charging of appropriate water abstraction rates; ensuring compliance and improved private sector involvement in IWRM activities;
ii. explore innovative financing mechanisms targeting strategic investors, development finance institutions and partnership frameworks;
iii. implement incentive-based strategies to attract the private sector to support WRM activities;
iv. institute efficient, effective and inclusive permit and licensing systems to regulate and adequately finance WRM;
v. establish a sustainable financing and robust governance mechanism (water fund) for the implementation of water resources management activities in watersheds and basins.

2.3.9 FOCUS AREA 8: CLIMATE VARIABILITY AND CHANGE

CHALLENGES

The main challenges of climate variability and change are:

i. ensuring that adequate response strategies to extreme events and disasters are in place;
ii. ensuring adequate support to vulnerable people in implementing their own coping strategies;
iii. limited capacity (human and logistics) to promote collaboration among institutions;
iv. insufficient access to information, climate change projections, impacts and uncertainties to inform decision-making and planning of water resources;
v. limited institutional capacity and collaboration to analyse, interpret and communicate drought and flood information to end-users;
vi. limited engagement of marginalised groups especially women and youth.

POLICY OBJECTIVES

The policy objectives are to:

i. mitigate the effects of climate variability and change and prevent damage caused by extreme hydrological and meteorological occurrences (floods and droughts);
ii. institute climate adaptation measures to minimise the effects of climate variability and change on agriculture, energy, water supply and other competing water uses;

iii. facilitate intra-institutional collaboration to address overarching climate change challenges in an integrated manner;
iv. institute climate mitigation measures;
v. incorporate climate change and variability impacts in IWRM;
vi. build institutional capacity to manage climate change and define and implement adaptation and mitigation programmes and measures;
vii. engage marginalised groups especially women and youth.

POLICY MEASURES/ACTIONS

To achieve the objectives, Government will:

i. promote the construction of flood protection structures at appropriate locations;
ii. develop and implement early warning systems for floods and droughts;
iii. undertake community engagement to create and maintain appropriate buffer zones along water bodies;
iv. promote appropriate farming methods and varieties that withstand the adverse effects of climate variability and change;
v. ensure that land-use planning/building regulations are adequate and enforced with respect to waterways and flood-prone areas;
vi. provide water conservation structures for multiple uses;
vii. ensure rainwater harvesting techniques as detailed in the Ghana Building Code GS1207 (2018) are implemented;
viii. ensure implementation of mitigation strategies in consultation with communities;
ix. promote appropriate technology in the generation and use of green energy for the delivery of safe water in Ghana.

2.3.10 FOCUS AREA 9: CAPACITY BUILDING

CHALLENGES

The main challenges with respect to capacity building include:

i. ensuring training, absorption and retention of water management practitioners;
ii. ensuring adequate institutional capacity encompassing administrative, financial, technical and logistical provisions;
iii. ensuring adequate personnel to coordinate stakeholders to improve upon the protection and management of Ghana's water resources;
iv. harnessing local knowledge systems to complement formal knowledge.

POLICY OBJECTIVES

The key policy objectives are to:

i. develop, strengthen and expand human, institutional and operational capacities for effective management of water resources;
ii. draw learnings from community lived experiences.

POLICY MEASURES/ACTIONS

To achieve the objectives, Government will:

i. equip water management institutions and DAs with appropriate tools and sustainable resources to effectively undertake their functions;
ii. develop skills related to various water management functions at all levels;
iii. promote interdisciplinary water resources education and training to include 'soft skills' (i.e. social values, economic, communication, negotiations and legal knowledge and skills among others);
iv. ensure the integration of WRM in relevant curricula at all levels of the educational system including that of security agencies to improve the knowledge needed for enforcement;
v. ensure the empowerment of water users/communities with skills of digital transformation for securing the water resources, providing safe water and mobilising water related revenues;
vi. employ and deploy "Water Guards" to police water bodies as a means to improving the regulation, management and the governance of the River Systems in Ghana.
vii. ensure particular emphasis is placed on the use of participatory mechanisms, including enhancement of the role of disadvantaged groups, youth and local communities with a special focus on women; and
viii. promote water management education across sectoral boundaries for decision makers, media, local communities, land and water managers.

2.3.11 FOCUS AREA 10: PUBLIC AWARENESS CREATION

CHALLENGE

The main challenge with respect to awareness creation is:

i. ensuring sustained and continuous learning from communities and dissemination of information to enable decision-making by the public.

POLICY OBJECTIVES

The key policy objectives are to:

i. create awareness of water as a finite resource which must be protected and preserved, taking cognisance of emerging issues such as climate change, water related disaster reduction and mitigation, infrastructure development and advocacy;
ii. effect a favourable behavioural change regarding responsible and efficient water use and protecting the nation's water bodies from pollution.

POLICY MEASURES/ACTIONS

To achieve the objectives, Government will:

i. encourage public participation in WRM practices including active engagement in collaborative programmes at all levels;
ii. enhance networking through effective partnerships among WRM actors such as regulators, academia and research, civil society, traditional authorities, media etc;
iii. promote advocacy and campaigns through learning platforms, local water resources ambassadors and civil society coalitions;
iv. enhance public engagements to deepen public knowledge, understanding and practices of WRM; and
v. utilise innovative ways, including social media platforms, for the dissemination of information to relevant stakeholders and the public.

2.3.12 FOCUS AREA 11: GOOD GOVERNANCE

CHALLENGES

The challenges include:

i. ensuring that water planning and decision-making follow a participatory approach in which all affected parties are included, and gender issues are mainstreamed;
ii. providing an enabling environment for sustainable WRM;
iii. ensuring that appropriate conflict resolution processes and mechanisms are instituted;
iv. ensuring the coordination of WRM activities within DAs.

POLICY OBJECTIVES

The objectives for assuring good governance are to:

i. ensure effective and meaningful participation of all stakeholders, including the private sector, local communities including women, in decision-making on water-related issues;
ii. ensure good governance to provide the enabling environment for sustainable WRM.

POLICY MEASURES/ACTIONS

To achieve the objectives, Government will:

i. ensure the representation and participation of women at all levels and in all spheres of water management activities;
ii. encourage private sector participation in WRM;
iii. ensure accountability at all levels in the use, management and development of water resources;
iii. deepen and strengthen the involvement of DAs, traditional authorities, opinion leaders and communities in the management of water resources at the local level;
iv. promote participation in water resources management and engagements at the community and household levels;
v. ensure the application and enforcement of relevant laws and regulations that govern water use, management and development; and
vi. promote the application of traditional knowledge and customary norms and laws for the effective management of water resources.

2.3.13 FOCUS AREA 12: DATA MANAGEMENT AND RESEARCH

CHALLENGES

The main challenges in data management and research are:

i. ensuring availability of adequate and timely data to users at all levels;
ii. dearth of local level community knowledge systems;
iii. promoting cutting-edge research to develop new insights, tools and methods for IWRM that integrate climate change;
iv. inadequate information for informed decision-making, planning and implementation of IWRM.

POLICY OBJECTIVES

The objectives in addressing data management and research challenges are to:

i. promote scientific, technological and socio-economic research in WRM;
ii. develop and use appropriate technologies and practices for sustainable water resources development;
iii. develop a coherent, efficient and streamlined data management process to support WRM;
iv. enhance linkages between formal and local knowledge systems.

POLICY MEASURES/ACTIONS

In order to improve and streamline data management and research, Government will:

i. support water sector institutions to extend the traditional fields of water research;
ii. encourage interdisciplinary and participatory research that recognises the need for a link between technology and communities;
iii. support data collection agencies to provide data and information on land use and water resources;
iv. support the standardisation of methods of data collection, archiving, processing and dissemination at all levels;
v. facilitate assessment and analysis of water resources availability and the impact of climate change and catchment degradation on water resources;
vi. ensure that monitoring and evaluation mechanisms are incorporated in data management and research;
vii. rehabilitate, expand and adequately equip primary hydrological, hydrogeological and water quality monitoring stations/networks to deliver expected data.

2.3.14 FOCUS AREA 13: INTERNATIONAL COOPERATION

CHALLENGES

The challenges in maintaining international cooperation between Ghana and its riparian neighbours include:

i. pursuing consultations and establishing cooperation mechanisms governing the management and development of internationally shared water resources for the reasonable and equitable benefit of all countries concerned;
ii. poor mechanisms for communication that aid in reducing uncertainty and improving planning.

POLICY OBJECTIVES

The objectives are to:

i. promote international cooperation in the use and management of shared water resources;
ii. ensure efficient basin-wide planning of shared water resources and the promotion of mutually beneficial socio-economic cooperation with riparian countries;
iii. promote the sharing of knowledge and information at national and transboundary levels.

POLICY MEASURES/ACTIONS

In order to vigorously pursue international cooperation, Government will:

i. ensure that all shared transboundary river basins and aquifers are covered by operational arrangements including having a joint mechanism, regular formal communications, joint common strategy or coordinated management plan and regular exchange of data and information;
ii. encourage water resources planning, development and management with a shared vision among the riparian countries for shared river basins and aquifers;
iii. encourage the sharing of the benefits of water resources of shared river basins and aquifers, for example, by extending hydropower, potable water and water transport to the other riparian countries, where feasible;
iv. encourage standardisation of data collection and pathways for exchange of data and information and their use with respect to transboundary issues;
v. pursue the application of mechanisms and obligations for the prevention, control and reduction of significant transboundary impacts from activities in other riparian countries and in Ghana;
vi. implement the ratified international water conventions, particularly the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992 Water Convention) to promote transboundary water resources governance; and
vii. ensure the development of an emergency response plan to address flooding/spillage etc. for transboundary river basins.

2.4 URBAN WATER SERVICES

2.4.1 OVERVIEW

Ghana is in a period of rapid urbanisation. Ghana's urban population has more than tripled, rising from 4 million to nearly 14 million people over the last three decades. Ghana Statistical Service indicates that just over half (50.9%) of Ghana's population live in urban areas. Migration from rural areas to towns and cities is driving urban growth.

The rapid rate of urbanisation outstrips current levels of urban water services. The Ghana Water Limited (GWL) which is the urban water utility currently operates eighty-eight (88) urban water supply systems throughout the country with an average production of about 881,668m^3 per day[8] as against a daily potable water demand estimated at 1,224,040m^3 per day. Water is therefore rationed to customers due to the high demand for water services.

The yields from supply sources are generally inadequate to meet current demand. The quality of water resources and abstraction points are also increasingly being degraded as a result of encroachment, poor agricultural practices, housing, illegal small-scale mining ('Galamsey'), sand winning, commercial and industrial activities. Following this, rainfall variability has increased with dry seasons becoming more pronounced. This leads to reduction in production volumes during these periods.

Other challenges facing the urban water services sector are:

- Difficulty in setting tariffs to recover costs;
- High levels of wastage arising from increasing levels of non-revenue water estimated at 46.66%[9];
- Inadequate revenue and investments, resulting in ageing infrastructure used in the production, transmission and distribution of water e.g. Kpong-Tema distribution line designed to last 30 years is now about 57 years;
- Low service reliability and tariffs not linked to levels of service;
- Huge legacy debts that have become a barrier to expansion works;
- Inadequate integration of spatial planning with water provision.

According to the Ghana Multiple Indicator Cluster Survey 2017/2018, about 93% of households in urban areas have access to basic drinking water services[10] with the remaining 7% having either limited service[11], use an unimproved source[12] or have no service[13] (resort to the use of surface water). There is a growing phenomenon of peri-urban settlements with inadequate safe water services. The Water Sector Strategic Development Plan (2012-2025) acknowledges the need to chart a strategy for providing water services to these areas. Similarly, among the urban poor, water services are inadequate. GWL has therefore set up a Low-Income Customer Support Department (LICSD) to deliver improved services in low-income urban communities.

The Government of Ghana is committed to expanding access to safe water services in urban areas with particular focus on improving water production, expansion of distribution systems and ensuring sustainable financing of the sector. It is estimated that about US$2 billion will have to be invested in water production to help increase current urban coverage to 100% country-wide by 2025[14].

8. As at the end of 2022
9. As at end of 2022
10. Basic services refer to an improved source, provided collection time is not more than 30 minutes for a roundtrip including queuing. Improved drinking water sources are those that have the potential to deliver safe water by nature of their design and construction, and include: piped water, boreholes or tubewells, protected dug wells, protected springs, rainwater, and packaged or delivered water.
11. Limited refers to an improved source that requires a round trip of more than 30 minutes.
12. Unimproved sources include unprotected dug wells and unprotected springs.
13. Surface water (no service) refers to the direct collection of water from rivers, lakes or irrigation channels.
14. GWL Corporate Plan, 2018-2022, Accra

2.4.2 FOCUS AREA 1: WATER SOURCES

CHALLENGES

The main challenges facing the urban water sub-sector in relation to water sources include:

i. difficulty in improving existing water sources, tapping new sources and managing catchments to eliminate or abate depletion and degradation of water resources;
ii. meeting increasing demand within finite supplies;
iii. increasing degradation of water quality resulting in high treatment costs.

POLICY OBJECTIVE

The objective for overcoming the above challenges is to:

i. ensure water resources are planned and managed by appropriate agencies to make it available at all times for life and health.

POLICY MEASURES/ACTIONS

In order to meet the above objective, Government will:

i. ensure sustainable and effective conservation and protection of existing/ potential water sources;
ii. ensure that the land and water agencies that are responsible for river basin management fulfil their mandates;
iii. delineate buffer zones around water abstraction points;
iv. ensure that alternative sources will be harnessed to meet present and future demand;
v. ensure that climate adaptation measures are enforced;
vi. where feasible and necessary, employ desalination of seawater and wastewater recycling as a means of increasing the availability of water resources.

2.4.3 FOCUS AREA 2: IMPROVING URBAN WATER SERVICES

CHALLENGES

The main challenges of improving urban water services include:

i. limited infrastructure and rehabilitation of aged treatment facilities and pipelines which are hampering full capacity production;
ii. difficulty in achieving equity in access to water supply for peri-urban and urban poor to meet their basic needs at affordable cost;
iii. improving operations and maintenance;
iv. reducing the high level of physical and commercial losses;
v. untimely investments that make it difficult in meeting water demand.

POLICY OBJECTIVES

The objectives of meeting the above challenges are to:

i. ensure sustainable financing of the infrastructure deficit to meet present and future demand;
ii. continuously improve management and operations of water systems including service reliability and quality.

POLICY MEASURES

To achieve the above objectives, Government will:

i. carry out rehabilitation and upgrading of reservoirs (treatment facilities) and all other water related infrastructure to restore and increase their capacity, where feasible, using appropriate means (e.g. dredging, raising spillway levels, off-river raw water reservoirs etc.), and new ones built where required;
ii. ensure that new investments in system extensions and expansion of bulk water production and distribution are based on well-established criteria that include health factors;
iii. introduce private sector participation in the investments (financing), operations and management of urban water supply;
iv. ensure that an equitable amount of investment resources is dedicated to extending services to low-income communities;
v. encourage developers and owners or managers of land and property to consider creating local rainwater storage for both residential facilities (e.g. gated communities/estates), industrial and commercial sites;
vi. facilitate the design and development of a strategy for the supply of water to peri- urban areas. This would involve properly defining peri-urban areas and establishing current water supply levels and supply options;
vii. encourage the use of technology in the water transmission and distribution process (to detect losses, improve billing, revenue collection etc.);
viii. regulate self-supply as an alternative option for water supply through permitting, trade-off of supply to GWL, monitoring of water quality and other technical standards etc;

2.4.4 FOCUS AREA 3: FINANCE

CHALLENGES

The main challenges of financing urban water supply include:

i. reducing the consistent high non-revenue water;
ii. paying exchange rate losses in the annual financial statements of GWL;
iii. improving the financial position of GWL to be able to attract funds for investment to rehabilitate and expand its infrastructure to meet growing demand;
iv. gradually increasing tariffs to recover costs fully while paying attention to affordability, particularly for the poor;
v. improving the management of the macro-economy to reduce inflation, exchange rate losses and the depreciation of the cedi by the government;
vi. improving the number of viable urban water supply systems;
vii. rising energy costs.

POLICY OBJECTIVES

The objectives are to:

i. ensure a financially viable utility;
ii. secure adequate funding to rehabilitate, improve and expand infrastructure.

POLICY MEASURES

To meet the challenges and objectives, Government will:

i. sustain the macro- economic interventions to contain inflation, stabilise the local currency and minimise exchange rate losses;
ii. ensure efficient asset management by GWL (e.g. GWL setting up a Depreciation Fund for replacement of fixed assets and a Sinking Fund for expansion development);
iii. source the required financing to extend water services to the unserved urban population;
iv. encourage the private sector to participate in the shareholding of the management of GWL;
v. support Public Utilities Regulatory Commission (PURC) in ensuring that average water tariffs reflect the full cost of water supply;
vi. ensure the timely payment of water bills by subvented organisations;
vii. encourage private sector participation in investments in the urban water sub-sector;
viii. invest in energy saving technologies/ alternative sources of energy (including mini-hydro power installations at main reservoirs and waterfalls) to reduce costs;
ix. establish a water fund to ensure sustainable funding and support the delivery of water supply services in urban areas; and
x. institute appropriate measures (minimise leakages, improve metering, field testing of customer meters and auditing) to reduce non-revenue water.

2.4.5 FOCUS AREA 4: PUBLIC PRIVATE PARTNERSHIPS

CHALLENGES

The key challenges include:

i. creating an enabling environment for public-private partnerships in urban water services, especially for extending services to peri-urban areas;
ii. limited number of viable urban water systems.

POLICY OBJECTIVE

The policy objective for addressing the above challenges is to:

i. promote private sector participation in investment and management of urban water supply as a means of mobilising investment and improving overall efficiency.

POLICY MEASURES

To achieve the above objective, Government will:

i. where feasible, enter into management contracts with private operators to invest in and manage the supply of water from source to consumer and also to reduce non-revenue water;
ii. lease the assets of GWL to private operators to run for specific periods on conditions which promote efficiency in service, affordability of tariffs and profitability on investment;
iii. ensure that private sector entities, as a pre-requisite, have equity or shares in investments (assets) to enable them to participate in the management of the water supply systems constructed by Government;
iv. reform the regulatory regime to allow for participation of private entrepreneurs in investment and management of water supply facilities including the granting of concessions to the private sector.

2.4.6 FOCUS AREA 5: CAPACITY BUILDING

CHALLENGES

The key challenges of capacity building include:

i. rationalising manpower levels based on industry standards;
ii. instituting capacity building in a holistic manner to cover organisation and systems.

POLICY OBJECTIVE

The policy objective is to:

i. develop and strengthen human resources and institutional /operational capacities to improve urban water service delivery.

POLICY MEASURES

Government will:

i. review, update and implement operational guidelines, service standards, procedures and processes on capacity building and institutional strengthening to ensure adequate capacities at all levels;
ii. promote objective oriented training with special emphasis on on-the-job coaching and mentoring.

2.4.7 FOCUS AREA 6: GOOD GOVERNANCE

CHALLENGES

The main challenges are:

i. ensuring public accountability in GWL operations.
ii. integrating women and gender sensitivity.

POLICY OBJECTIVE

The policy objective is to:

i. ensure that existing regulations regarding service delivery, disclosure and procurement are adhered to.

POLICY MEASURES

Government will:

i. ensure that public hearings provided under the PURC Act/Regulations are adhered to;
ii. facilitate the process of improving efficiencies and sustainability of systems;
iii. ensure that GWL publishes its annual performance contract with the State Interest and Governance Authority (SIGA);
iv. ensure that GWL publishes its annual report and audited accounts as required by the Companies Act, 2019 (Act 992);
v. Ensure adherence to the Public Procurement Act (Act 663), 2003 (as amended with Act 914, 2016);
vi. ensure that delivery of GWL services recognises the needs of the vulnerable and is gender sensitive;
vii. enact a Water Services Act to provide legal backing to the provisions in the revised NWP.

2.4.8 FOCUS AREA 7: RESEARCH AND DEVELOPMENT

CHALLENGE

The main challenge of research and development in the urban water sub-sector is:

i. ensuring availability of adequate data and appropriate technologies to support improved urban water supply in the face of increasing demand.

POLICY OBJECTIVE

The objective to address this challenge is to:

i. ensure evidence-based decision-making in the provision of urban water.

POLICY MEASURES/ACTIONS

To improve research and development in support of decision-making, Government will:

i. develop a research strategy and conduct research and studies on relevant issues affecting service delivery in the urban water sub-sector;
ii. continue to strengthen and support GWL in research and development to improve service delivery;
iii. continue to strengthen and support the water research institutions to provide accurate and regular data and information about the water cycle and water quality;
iv. strengthen the collaboration among research institutions notably the Council for Scientific and Industrial Research (CSIR) research institutes and relevant university departments;
v. support local private sector entrepreneurs to produce equipment and instruments used in the water supply industry;
vi. support studies into alternative options for improving services to low-income areas and serving the poor more effectively.

2.4.9 FOCUS AREA 8: MONITORING AND EVALUATION

CHALLENGES

The main challenges are:

i. institutionalising M&E processes;
ii. existence of conflicting data based on provider-based and user-based data collection systems.

POLICY OBJECTIVE

The policy objective in addressing these challenges is to:

i. ensure that policies are implemented to achieve the desired results of improving access and quality of living standards.

POLICY MEASURES/ACTIONS

Government will:

i. support the development of appropriate sector indicators;
ii. ensure adequate support to institutions for carrying out M&E;
iii. operationalise the Sector Information System (SIS) across the country and report on the WASH Golden Indicators biennially;
iv. ensure adequate budgetary allocation and disbursements biennially for data collection to feed the SIS;
v. harmonise data collection systems to ensure consistency in reporting of access and coverage rates.

2.4.10 FOCUS AREA 9: EMERGENCY AND EXTREME EVENTS

CHALLENGE

The key challenge is:

i. inadequate preparation and response to the increasing occurrences of water-related emergencies and extreme events.

POLICY OBJECTIVE

The policy objective is to:

i. effectively mitigate the effects of droughts, floods and other water-related emergencies.

POLICY MEASURES/ACTIONS

In order to assure the preparedness of the urban water sub-sector in responding to extreme events and disasters, Government will:

i. facilitate the development of an emergency water supply action plan for each system in consultation with the relevant emergency services and critical consumers;
ii. facilitate the delivery of adequate quantity of water for public emergency events in the timeliest manner possible;
iii. make sure that water supplied for public emergency events take precedence over supplies for domestic consumers while taking steps to prevent and reduce conflicts in demand and access;
iv. promote the use of innovative technology to harness flood water for treatment/reuse to serve communities hit by floods;
v. develop contingency plans and establish financing mechanisms (including annual budgets) to deal with emergencies and pandemics e.g. COVID-19.

2.4.11 FOCUS AREA 10: EQUITY AND INCLUSION (PRO-POOR ISSUES)

CHALLENGES

The main challenges of making the urban water sub-sector sensitive to pro-poor issues include:

i. setting tariffs to recover costs fully while paying attention to affordability, particularly by the poor;
ii. achieving equity in access to water supply for peri-urban and urban poor to meet their basic needs at affordable costs;
iii. inability to identify and deliver targeted subsidies to the poor;
iv. existing lifeline subsidies that do not directly benefit the majority of the poor;
v. rapid urbanisation makes slum communities and inner cities the preferred destination for the poor, but these areas are not adequately served by the water utility;
vi. understanding the needs of the poor and designing interventions to suit their supply and payment choices.

POLICY OBJECTIVE

The key objective in responding to urban water issues affecting the poor is to:

i. ensure improved, sustainable and equitable access to water for the poor and vulnerable for their basic needs.

POLICY MEASURES/ACTIONS

To achieve the above objective, Government will:

i. adopt a tariff structure that provides an optimal benefit to consumers including low-income consumers;
ii. establish a programme such as a Social Connection Fund to support the connection of low-income consumers to the network;
iii. ensure sustainable funding for the Low-Income Customer Support Department of GWL;
iv. facilitate defining unserved zones and identify cost-effective alternatives for progressively extending services to these areas;
v. facilitate the use of appropriate technology that enables easy access to water by the vulnerable especially Persons with Disabilities (PWDs);
vi. encourage cooperation between private operators and small-scale independent providers, rather than grant exclusivity to either party, to facilitate adequate and affordable provision of safe drinking water to unserved and underserved areas.

2.4.12 FOCUS AREA 11: WATER SAFETY

CHALLENGES

The challenges to ensuring water safety include:

i. contamination/pollution of raw water sources;
ii. contamination of treated water during transmission due to broken pipes that allow intrusion;
iii. inadequate monitoring of water quality by regulatory institutions;
iv. limited resources to address identified risks and hazards to drinking water quality and safety;
v. use of the same tankers for supplying drinking water and raw water for construction and other uses that present water quality challenges for urban residents who rely on such services for drinking water;
vi. providing adequate quantities of safe drinking water in the face of climate impacts and emergencies (e.g. floods, droughts).

POLICY OBJECTIVE

The objective is to:

i. ensure continuous supply of safe water for the protection of public health.

POLICY MEASURES/ACTIONS

In order to ensure the supply of safe water in urban areas, Government will:

i. ensure the preparation and implementation of water safety plans for all treatment plants nationwide from the catchment (including raw water source) to point of use in line with the National Drinking Water Quality Management Framework;
ii. facilitate capacity building/training programmes for water suppliers on water safety planning;
iii. support and resource PURC to conduct regular water quality monitoring and ensure that water supplied meets the standards set by the Ghana Standards Authority;
iv. provide the resources needed to address identified/potential risks from catchment to consumers, including threats from current and future climate variability and change;
v. ensure the development of effective reporting mechanisms to provide relevant and timely information on water quality to prompt appropriate action and promote confidence in urban water supply services;
vi. facilitate multi-stakeholder coordination to ensure involvement of all institutions in drinking water quality management;

vii. ensure that GWL laboratories are equipped with appropriate equipment and technologies to effectively test and publish results of water quality testing;
viii. ensure supervision of the activities of tanker operators and enforcement of the PURC Guidelines on Tanker Services;
ix. ensure collaboration between GWL and Environmental Health and Sanitation Units of DAs on checking/ ensuring water quality at the household level;
x. educate consumers on household water treatment and safe storage.

2.4.13 FOCUS AREA 12: CONSUMER INTEREST/EDUCATION

CHALLENGES

The challenges to consumer interest include the following:

i. unreliable service delivery;
ii. non-payment of bills by consumers;
iii. inefficient water use resulting in wastage.

POLICY OBJECTIVES

The objectives to overcome the identified challenges are to:

i. improve consumer satisfaction in urban water service delivery;
ii. promote sustainable conservation of water resources and efficiency in the use of water.

POLICY MEASURES/ACTION

To promote and enhance consumer interest/education, Government will pursue the following policy measures:

i. reduce arrears of payment of water bills through provision of incentives (e.g. rewarding loyal and dedicated customers, introduction of pre-paid metering, charging interest on delayed payments by large consumers etc.);
ii. ensure that GWL fully implements its customer charter for transparency;
iii. support PURC to effectively play its role of advocate/protector of consumer interests;
iv. create awareness on the channels available at the national, regional and district levels for lodging complaints and seeking redress on issues such as water quality and reliability of service;
v. promote awareness and mass education on water conservation and efficient water use;
vi. periodically conduct consumer satisfaction surveys.

2.5 COMMUNITY WATER SERVICES

2.5.1 OVERVIEW

The rural water supply sub-sector has since 1994 operated under the guidance of the National Community Water and Sanitation Programme (NCWSP). In 1998, the Community Water and Sanitation Agency (CWSA) was established as an autonomous organisation by an Act of Parliament, Act 564, with the mandate to facilitate the provision of safe drinking water and related sanitation services to rural communities and small towns and to coordinate all stakeholders and interventions under the direction of the NCWSP. CWSA is now firmly established in all the 16 regions of the country and has provided support over the years to DAs in executing water and sanitation projects including project planning and procurement.

An underlying principle of the NCWSP is its emphasis on community ownership and management (COM) which entails effective community participation in the planning, implementation and management of water and sanitation facilities in the belief that as custodians, communities will ensure the sustainability of these systems.

The NCWSP has made some progress since its launch in 1994. A total of 32,871 boreholes have been fitted with hand pumps and 1,022 reticulated water systems (made up of piped schemes and limited mechanised systems) have been constructed across the country under the programme. Access to water supply in rural communities and small towns in Ghana has risen from 27% in 1992 to 61.61% in 2021, while contributing to improvement in water-related sanitation and hygiene. It is worthy to note that, Non-Governmental Organisations, Civil Society Organisations (CSOs), Faith Based Organisations and Small Water Enterprises[15] among others have also contributed to investments in water infrastructure aimed at improving access to safe water in rural communities and small towns. The implementation of the NCWSP has been fraught with a number of challenges following years of its implementation as outlined below:

- non-functional or partially functioning piped and point source water systems;
- repeated breakdown and rehabilitation of existing water supply infrastructure;
- increasing water losses leading to high cost of production;
- inadequate capacity of communities to manage complex systems;
- low capacity for water safety planning particularly at the community level;
- dwindling development partner support to the sub-sector;
- inadequate Government of Ghana support to the sub-sector
- lack of effective coordination among stakeholder institutions;
- sustaining supply of spare parts for the maintenance of water facilities.

Given these challenges with the sustainability of the management of water systems, CWSA in 2017 initiated policy reforms to transform the Agency into a public utility organisation with the responsibility for the provision and management of small town piped water systems. A key objective of the reform is the professionalisation of the operations and management of piped water systems using Water System Management Staff (WSMS) made up of Engineers, Technicians, and Accountants etc. The mandate of CWSA is therefore being expanded to include the management of piped water systems. The reform would see a change from the community ownership and management approach to a more coordinated and professionalised operation and management of small-town water supply systems. However, point source water facilities would continue to be under the community ownership and management model.

Although there exist 1,022 reticulated water systems in the country, only 177 are currently under the management of CWSA within the pilot phase of its reforms. A decision has been taken conferring asset ownership on CWSA with respect to all publicly funded small town water systems notwithstanding the contributions to capital cost of these facilities from DAs and communities. Indeed ownership was originally conferred on the beneficiary communities through Facility Management Plans (FMPs) signed in respect of these systems.

15. Small Water Enterprises (SWEs) are off-grid community water systems, stations, or kiosks (some with household connections) operated as local water businesses that provide consumers with a reliable source of safe, affordable water.

Given the existence of other management models[16] elsewhere, it would be appropriate to commission a study to determine the applicability of these other models to the remaining systems outside the utility model of CWSA. An output of the study would be the development of guidelines for the management of these models.

The reforms are crucial to creating the enabling environment for increased coverage towards meeting SDG 6. The SDGs run a relay-track. First, it intends to complete the unfinished business of the Millennium Development Goals (MDGs) and second, to close the widening gaps of inequalities towards achieving access to water and sanitation for all without leaving any one behind[17]. SDG 6 requires that all households in Ghana have access to safe water on the premises by 2030, making the requirements of the SDGs more stringent than the MDGs. The targets set by the SDGs therefore require increase in rural infrastructure and improvements in planning, coordination and resource allocation.

2.5.2 FOCUS AREA 1: ACCESS TO SAFE WATER

CHALLENGES

The major challenges to improving access to safe water in rural communities and small towns are:

i. limited achievement of accelerated coverage and sustainability through community ownership and management;
ii. non-functionality of existing water systems;
iii. poor management of water systems through the community ownership and management model;
iv. limited investments in unserved and hard-to-reach communities.

POLICY OBJECTIVES

The policy objectives for ensuring sustainable access to safe water in rural communities and small towns are to:

i. provide safe water and related hygiene services for small towns and rural communities mindful of the need to ensure affordability, equity and fairness for the poor and vulnerable;
ii. progressively achieve universal access to safely managed drinking water by initially providing access to basic drinking water services.

POLICY MEASURES/ACTIONS

In order to achieve the above objectives, Government will:

i. promote equitable access to safe water based on informed assessment by the relevant institutions to ensure sustainable service delivery;
ii. prioritise investments and identify innovative ways to ensure access to water in unserved, hydro-geologically challenged and hard-to-reach communities;
iii. prioritise investments in rehabilitation and expansion of existing water systems to restore and increase their capacities;
iv. support institutions responsible for providing information on availability and reliability of water resources (quantity and quality).

16. The other management models include Community Management Plus with its variants, Local Government management and its variations and Private Sector management.
17. UN General Assembly (2015). "Transforming our world: The 2030 Agenda for Sustainable Development." Division for Sustainable Development Goals: New York, NY, USA.

2.5.3 FOCUS AREA 2: DELIVERY OF WATER SERVICES

CHALLENGES

The challenges in relation to the delivery of water services in small towns and rural communities are:

i. high attrition of Water and Sanitation Management Teams (WSMTs) after they have been trained;
ii. limited capacity of the WSMTs to effectively manage water systems;
iii. limited capacity of the District Works Departments (DWDs) to effectively support communities in the delivery of water services;
iv. overlap in operational areas of CWSA and GWL.

POLICY OBJECTIVES

The policy objectives in relation to the delivery of water services are to:

i. ensure sustainability through effective rural water utility management of piped water supply systems with the active participation of the public and private sectors;
ii. promote community ownership and management of point sources;
iii. ensure sustainability through community management of point source water systems with the active participation of women, public sector facilitation and the private sector provision of goods and services;
iv. deepen collaboration between DAs and relevant government water institutions in the provision of water services;
v. ensure sustainability of climate-sensitive and appropriate technology to delivering safe and sustainable water;
vi. support DAs to meet their statutory obligations by facilitating and coordinating the provision of water services to communities within their jurisdictions.

POLICY MEASURES/ACTIONS

Government will pursue the following policy measures/actions:

i. consolidate the process of change from community ownership and management (COM) model to professionalised management of piped water supply systems;
ii. adopt appropriate management models for piped water systems outside the CWSA utility model;
iii. ensure the efficient management of point sources through community ownership and management;
iv. support PURC to regulate the operations of piped water systems under the utility model;
v. ensure that DAs and Office of Head of Local Government Service (OHLGS) resource and strengthen the required structures for WASH services delivery such as the District Works Departments (DWDs) to support community based WSMTs in the operation and management of point source water systems;
vi. support DAs to develop detailed WASH activities as a component of their Medium-Term Development Plans (MTDPs) and Annual Action Plans (AAPs);
vii. ensure the active involvement of DAs in the monitoring and supervision of water services;
viii. develop guidelines for entities that would be providing rural and small town water services;
ix. promote greater synergy between CWSA and GWL in the provision of water services to reduce overlaps in operational areas;
x. facilitate the transfer of ownership of assets from DAs to CWSA with respect to piped water systems in which the former contributed to capital cost of construction.

2.5.4 FOCUS AREA 3: FINANCE

CHALLENGES

The challenges to sustainable financing of the community water services sub-sector are:

i. inadequate public sector funding/investments in rural water services;
ii. dwindling funding support from external sources for capital investments;
iii. unrealistic water tariffs that affect sustainability of operations.

POLICY OBJECTIVE

The policy objective is to:

i. mobilise adequate and sustainable financing for scaling up water service delivery.

POLICY MEASURES/ACTIONS

In order to achieve the above objective, Government will:

i. increase public sector funding through budgetary allocations and disbursements as will be indicated in the Strategic Investment Plan (SIP) for community water services;
ii. leverage more grant/credit financing for community water services;
iii. leverage partnerships with the private sector and other non-state actors to secure funding for investments in community water services;
iv. support and promote the scaling up of self-financing and affordable market approaches to small water delivery in rural and peri-urban communities;
v. ensure the setting-up of realistic tariffs by PURC for piped water systems under the utility model to ensure effective operation and maintenance;
vi. ensure that DAs support communities to determine appropriate user fees for point sources;
vii. promote innovative technologies that improve efficiency in revenue collection;
viii. establish a water fund to ensure sustainable funding and support the delivery of water supply services in small-towns and rural communities; and
ix. ensure payment of bills by state institutions with respect to piped water systems.

2.5.5 FOCUS AREA 4: HYGIENE EDUCATION/PROMOTION

CHALLENGE

The challenge with hygiene promotion with respect to the community water services sub-sector is:

i. ensuring change in behaviours and attitudes towards the fundamental principles of hygiene.

POLICY OBJECTIVE

The policy objective in taking cognisance of the challenge is to:

i. maximise health benefits through integration of safe water and hygiene education interventions.

POLICY MEASURES/ACTIONS

In working towards achieving the above objective, Government will:

i. support the integration of safe water and hygiene education/promotion (including hand washing, household water treatment and safe storage) interventions;
ii. ensure all water supply projects have budgets allocated to hygiene education/promotion;
iii. undertake continuous hygiene education through the mass media on safe water fetching, transportation, storage and use/consumption of drinking water;
iv. promote household water treatment and safe storage, especially in communities without piped water connections;
v. ensure collaboration and coordination among relevant Ministries and Agencies towards effective hygiene education/promotion.

2.5.6 FOCUS AREA 5: PUBLIC PRIVATE PARTNERSHIPS (PPPs)

CHALLENGES

The challenges with PPP in the community water services sub-sector are:

i. attracting and protecting investments from the private sector and other non-state actors in rural water service delivery;
ii. ensuring private sector participation in managing spare parts supply chains particularly for point sources in a sustainable manner;
iii. inadequate capacity of DAs to participate in partnerships with the private sector;
iv. lack of clarity on concessionary agreements.

POLICY OBJECTIVE

The objective is to:

i. create the enabling environment that will attract non-traditional sources of finance.

POLICY MEASURES/ACTIONS

Government will therefore:

i. actively promote and protect the investments of the private sector and other non-state actors in community water service delivery through arrangements that are beneficial to all stakeholders (consumers and public/private entities) such as Build-Operate-Transfer, Build-Own-Operate-Transfer, Rehabilitate-Operate-Transfer etc.;
ii. lease assets of CWSA to private operators and other non-state actors to operate for specific periods on conditions which promote efficiency in service, affordability of tariffs and profitability on investment;
iii. ensure that private sector and other non-state entities, as a pre-requisite, have equity or shares in an investment to enable them to participate in the management of the water supply systems constructed by the Government;
iv. recognise the roles of small water enterprises and small-scale providers (secondary and tertiary) in the water supply chain and provide support where appropriate;
v. support DAs that would want to enter into short- to long-term arrangements with the private sector and other non-state actors within the framework of the Public-Private Partnership Act (Act 1039), 2020;
vi. implement a scheme of tax incentives to encourage investment by the private sector and other non-state actors in community water services;
vii. develop a licensing regime for the private sector and other non-state actors that would enable construction of piped water systems in rural communities and small towns and operate as utilities;
viii. ensure that private entrepreneurs and non-state actors who invest, operate and manage rural and small-town water facilities are regulated by the appropriate institutions e.g.; PURC and Ghana Standards Authority.

2.5.7 FOCUS AREA 6: CAPACITY BUILDING

CHALLENGES

The main challenges are:

i. inadequate continuous capacity building for national agencies, regional, district and community level actors;
ii. inadequate capacity in terms of technical and managerial competency, knowledge and numbers at the DA and community levels for the delivery and management of water services;
iii. low involvement of local private firms in the community water services sub-sector which affects installation, operation and maintenance.

POLICY OBJECTIVES

The policy objectives are to:

i. build capacities of CWSA, DAs (particularly the DWDs) and all other key actors including NGOs, CBOs, CSOs, and WSMTs;
ii. enhance the capacity of local private sector to play a greater role in the delivery of goods and services.

POLICY MEASURES/ACTIONS

Government will therefore:

i. develop an inventory of different expertise and needs assessment in the community water sub-sector to determine the capacity deficit;
ii. engage the private sector and other relevant institutions in the training of water practitioners in the sub-sector to ensure skills rub-off and transfer of knowledge;
iii. encourage the formation of joint venture and other partnership arrangements between local and foreign firms to promote technology and know-how transfer;
iv. support Office of Head of Local Government Service (OHLGS)/Ministry of Local Government, Decentralisation and Rural Development (MLGDRD) to strengthen the water units of the DWDs at the DA level;
v. support mechanisms that ensure sustained provision of post-installation capacity building to facility and system managers;
vi. promote local manufacture of equipment.

2.5.8 FOCUS AREA 7: GENDER MAINSTREAMING AND GOOD GOVERNANCE

CHALLENGES

The main challenges are:

i. adhering to the principle of integration of women and gender sensitivity in rural and small town piped water projects;
ii. ensuring active involvement of women in decision-making in promoting ownership, management, application of technical skills, transparency and accountability;
iii. non-adherence of WSMTs to financial management and accountability guidelines.

POLICY OBJECTIVES

To meet the above challenges, the objectives will be to:

i. support the development of human resource management guidelines which would ensure the active participation of women as a means of empowering them to take charge of water issues at all levels;
ii. ensure that there are transparent processes for procurement and accountability in the management and delivery of small-town water services.

POLICY MEASURES/ACTIONS

The key measures to be taken by Government include:

i. training both men and women to effectively perform their roles in water and hygiene activities with a view to attaining gender balance in decision-making positions at all levels;
ii. ensuring accountability and transparency through timely reporting and participatory discussion of results at all levels;
iii. ensuring transparency in the procurement and selection of private operators for the management of publicly funded small town water systems;
iv. ensuring active stakeholder participation in decision-making on the ongoing policy reforms in the community water services sub-sector;
v. facilitating effective coordination of the sub-sector and harmonise development partner activities;
vi. ensuring collaboration among relevant key actors at all levels in the community water services sub-sector.

2.5.9 FOCUS AREA 8: RESEARCH, INNOVATION AND LEARNING

CHALLENGE

The main challenge is:

i. lack of a clearly defined and adequately funded research strategy that ensures continuous learning and knowledge sharing of good practices to improve community water services.

POLICY OBJECTIVE

The objective is to:

i. promote the generation, sharing and utilisation of knowledge relevant to the community water sub-sector.

POLICY MEASURES/ACTIONS

Government will implement the following measures:

i. develop a research strategy that defines areas for research and technological needs which are in tandem with the current focus of community water services;
ii. provide funding for research on key issues affecting the delivery of water services;
iii. promote networking activities that support partnerships among stakeholders, research institutions and professional associations in the community water sub-sector;
iv. coordinate and disseminate research results through various recognised platforms at the national, regional and district levels in a sustainable manner;
v. mainstream key interventions from sector learning and sharing platforms (such as the National Level Learning Alliance Platform) into policy formulation and strategy development.

2.5.10 FOCUS AREA 9: OPERATION AND MAINTENANCE (O&M)

CHALLENGES

The main challenges of O&M include:

i. sustaining O&M to ensure the continuous use of facilities during their full life cycle;
ii. weak supply chain management for spare parts;
iii. limited use of technology and innovative approaches.

POLICY OBJECTIVE

The policy objective is to:

i. promote sustained use of facilities through training and adoption of best practices for routine and regular maintenance.

POLICY MEASURES/ACTIONS

To meet the above objective, Government will:

i. leverage technology to improve the monitoring of the performance, operations and maintenance of water systems;
ii. strengthen DAs with the required structures and capacity for supporting communities managing point sources with O&M;
iii. strengthen CWSA with the required structures and capacity for the O&M of small town piped water systems;
iv. provide sufficient support to CWSA to train area/pump mechanics and caretakers of point water sources as well as operators and managers of small town piped systems;
v. provide support to local equipment and machinery manufacturers, suppliers and distributors in a bid to sustain markets for spare parts;
vi. ensure that area mechanics are recognised as important partners in sustaining the delivery of community water services and given adequate business development support.

2.5.11 FOCUS AREA 10: MONITORING AND EVALUATION

CHALLENGES

The main challenges facing the community water services sub-sector regarding M&E are those of:

i. institutionalising a well-defined participatory M&E system that adequately informs government and all stakeholders of sector progress;
ii. strengthening the application of M&E system at the DA level;
iii. lack of agreed clearly defined Key Performance Indicators (KPIs);
iv. existence of conflicting data based on provider-based and user-based data collection systems.

POLICY OBJECTIVES

The policy objectives for M&E are to:

i. provide evidence-based decision-making in the delivery of water services to rural communities and small towns;
ii. report on service indicators as it relates to the achievement of the SDG for community water services in Ghana.

POLICY MEASURES/ACTIONS

To meet the above objectives Government will:

i. ensure the development and implementation of a sector M&E plan/strategy;
ii. strengthen the national M&E coordination group;
iii. operationalise the Sector Information System (SIS) and District Monitoring and Evaluation System (DiMES) and report on the WASH Golden Indicators biennially;
iv. ensure adequate budgetary allocation and disbursements biennially for data collection to feed the SIS;
v. ensure relevant organisations at all levels, provide timely and reliable information for tracking sector progress and contributing to the annual government policy framework updates;
vi. support institutional strengthening of national and regional level organisations as well as DAs in carrying out M&E;
vii. support the relevant agencies to define indicators for M&E;
viii. incorporate KPIs in all management models including PPPs;
ix. strengthen the mechanisms at the DA level for monitoring and assessment of the functionality of systems;
x. harmonise data collection systems to ensure consistency in reporting on access and coverage rates.

2.5.12 FOCUS AREA 11: EQUITY AND INCLUSION

CHALLENGES

The main challenges to equity and inclusion in rural communities and small towns include:

i. understanding the needs of the poor and designing interventions to suit their supply and payment choices;
ii. hard to reach communities in remote and hydro-geologically challenged areas continue to remain unserved;
iii. increasing tariffs to recover costs fully for piped water systems while paying attention to affordability, particularly by the poor.

POLICY OBJECTIVE

The key objective in responding to equity and inclusion concerns in the provision of community water services is to:

i. ensure improved, sustainable and equitable access to water services to the poor and vulnerable for their basic needs.

POLICY MEASURES/ACTIONS

To achieve the above objective, Government will:

i. adopt a tariff structure that provides an optimal benefit to consumers including the poor and vulnerable under the utility model;
ii. facilitate the definition of unserved areas and identify cost-effective alternatives for progressively extending services to these areas;
iii. facilitate the use of appropriate technology in the provision of water to the vulnerable, especially Persons with Disabilities (PWDs);
iv. encourage cooperation between private operators and small-scale independent providers to facilitate adequate and affordable provision of safe drinking water to unserved and underserved areas;
v. empower communities to demand their right to safe water services.

2.5.13 FOCUS AREA 12: WATER SAFETY

CHALLENGES

The challenges to the supply of safe water include:

i. inadequate capacity for development and implementation of water safety plans;
ii. inadequate human, financial and logistical resources at the regional and district levels to undertake water quality testing of point sources in the communities;
iii. inadequate funding for remedial actions to address water safety issues;
iv. limited/occasional/ad hoc approach to water quality testing;
v. lack of water quality monitoring of self-supply water systems on private premises (including households and institutions).

POLICY OBJECTIVES

The objectives to overcome the challenges are to:

i. ensure continuous supply of safe water for public health promotion;
ii. ensure that water supplied to communities meet the drinking water quality standards set by the Ghana Standards Authority.

POLICY MEASURES/ACTIONS

To achieve the above objectives, Government will:

i. ensure the development and implementation of water safety plans for all rural water systems from the catchment (including raw water source) to point of use in line with the National Drinking Water Quality Management Framework;
ii. facilitate the engagement and training of adequate skilled water safety professionals to assure water safety;
iii. ensure periodic water quality monitoring of piped water systems and ensure that water supplied meets the standards set by the Ghana Standards Authority;
iv. provide adequate human, logistical and financial resources at regional and district levels for drinking water quality assurance for point sources;
v. adopt a collaborative stakeholder approach to ensure involvement of all institutions towards water safety;
vi. develop mechanisms for monitoring self-supply including issues relating to quality and trade-off to key water service providers;
vii. provide the necessary resources to undertake remedial actions to address identified risks to water safety;
viii. provide community sensitisation interventions to prevent contamination during handling and storage and between delivery and consumption points.

3. INSTITUTIONAL ARRANGEMENTS FOR POLICY IMPLEMENTATION

This final section sets out the institutional arrangements for effective implementation of the policy. It outlines implementation procedures, guidelines, institutional roles and responsibilities, legal and regulatory frameworks, interfacing issues and the definition of terms. The implementation of the policy would align with the broad medium-term actions of the CPESDP (2021-2025) which seeks to ensure that every Ghanaian has access to potable water.

Recognising the cross-cutting nature of water, a key to the successful implementation of this policy is effective coordination and collaboration among the various institutions that have an interest in water. To achieve effective collaboration, the roles and responsibilities of the various institutions have been clearly defined. Also, the responsibilities for the development and implementation of guidelines for water use and services are clearly outlined. The institutions responsible for various water uses and services are divided into (a) "key sector agencies" that deal with direct implementation and (b) "allied sector agencies" that play supporting roles including regulation and oversight.

3.1 OVERVIEW OF KEY WATER SECTOR INSTITUTIONS

Leadership for the water sector is provided by MSWR with support from its sub-sector agencies i.e. WRC, GWL and CWSA. An important allied institution operating in the sector is the Public Utilities Regulatory Commission (PURC). MSWR is responsible for the development of an implementation plan for the entire policy, whereas the relevant sub-sector agencies would be responsible for developing implementation guidelines, plans and strategies to deliver on the policy areas and measures/actions specific to their line of work.

3.1.1 MINISTRY OF SANITATION AND WATER RESOURCES

At the policy level, MSWR is the lead government institution responsible for the overall policy formulation, planning, coordination, collaboration, monitoring and evaluation of programmes relating to WRM and sanitation services. The goal of MSWR is to contribute to improvement in the living standards of Ghanaians through increased access to and use of safe water, sanitation and hygiene practices and sustainable management of water resources.

The structure of MSWR is in accordance with the Civil Service Act (Act 327), 1993. Consistent with the organisational structure of Act 327, 1993, MSWR has the following directorates:

- finance and administration;
- policy planning, budgeting, monitoring and evaluation;
- research, statistics and information management; and
- human resource development and management.

In addition to the directorates prescribed in the Civil Service Act (Act 327), 1993, MSWR has two technical directorates; the Water Directorate which is responsible for the coordination of policies, programmes and projects for WRM, urban water services and community water services sub-sectors and the Environmental Health and Sanitation Directorate which coordinates policies, programmes and projects on all aspects of sanitation.

3.1.2 WATER RESOURCES COMMISSION (WRC)

WRC was established in 1996 through an Act of Parliament (Act 522) to address the diffused state of functions and authority in the water resources management sub-sector. Its mandate is to regulate and manage the utilisation of the country's water resources and coordinate relevant government policies in relation to them. The Board of WRC is made up of categories of actors representing regulators, scientific institutions and major water users. This brings together different sets of actors for the purpose of coordinated decision-making. WRC is the focal institution for Ghana's transboundary WRM arrangements. The Commission's functions and mandates are implemented at the basin level through basin management boards.

The tools used by WRC in the management of water resources are the issuance of permits to water users, licenses to groundwater drillers and dam safety licenses to dam owners, managers and operators. Certain categories of water users are, however, exempted from obtaining permits. The exempted uses are water for the purpose of fighting fires, domestic water use and small-scale irrigation water uses. The water uses regulated by WRC include domestic, commercial, industrial, agricultural, power generation, fisheries (aquaculture), recreational and underwater (wood) harvesting.

3.1.3 GHANA WATER LIMITED (GWL)

Ghana Water Company Limited now Ghana Water Limited (GWL) was established by the Statutory Corporations (Conversion to Companies) Act 461 of 1993 as amended by LI 1648 as the sole government utility company in charge of safe water supply to urban communities in Ghana. The core business of GWL for urban water supply involves (i) the abstraction, treatment and supply of water to urban communities, (ii) urban water sector planning and development, (iii) investment planning, (iv) sector financial management, (v) contracting out the design, construction, rehabilitation and expansion of existing as well as new water supply infrastructure and (vi) assets management.

Since 2018, GWL as part of its re-organisation has ventured into the commercial production and sale of bottled water. A major implication of this development is that GWL has to subject itself to the regulation of the Food and Drugs Authority which is mandated to ensure that bottled water produced by all manufacturers meet the acceptable quality and public health standards.

3.1.4 COMMUNITY WATER AND SANITATION AGENCY (CWSA)

CWSA was established by an Act of Parliament (Act 564), 1998 with the mandate to; "facilitate the provision of safe drinking water and related sanitation services to rural communities and small towns in Ghana'. As already mentioned, since 2017, CWSA initiated institutional reforms that seek to transform the operations of the organisation to ensure sustainable and safe delivery of community water services. The reforms are bifurcated; (a) point sources would continue to be managed within the framework of the community ownership and management concept and under the supervision of DAs and (b) small town piped water supply systems to be managed by CWSA as a public utility organisation. A key implication of CWSA becoming a public utility organisation is that the tariff for piped water systems will be subject to the approval of the Public Utilities Regulatory Commission (PURC) as is the case with urban water supply by GWL. The recommendations emanating from the proposed study on the feasibility of the other management models should be implemented within the first year of this policy. In addition, since CWSA will become a public utility organisation, it is necessary that government considers defining the appropriate organisational structure within which it will operate that is, either as a state-owned limited liability company, an authority or agency.

3.1.5 PUBLIC UTILITIES REGULATORY COMMISSION

The PURC Act (Act 538) 1997 (as amended with PURC (Amendment) Act (Act 800), 2010) mandates the Commission to be responsible for the regulation of utility services in the electricity and water sectors including the provision of guidelines for the setting and approval of tariffs, protecting consumer interests, monitoring and enforcing standards. Currently, PURC regulates the activities of GWL by approving the water tariffs set by the Company, undertaking water quality testing, and protecting customer interest. In similar vein, since CWSA would become a public utility organisation, issues relating to tariff setting, water quality testing and the protection of consumer interest would be regulated by PURC.

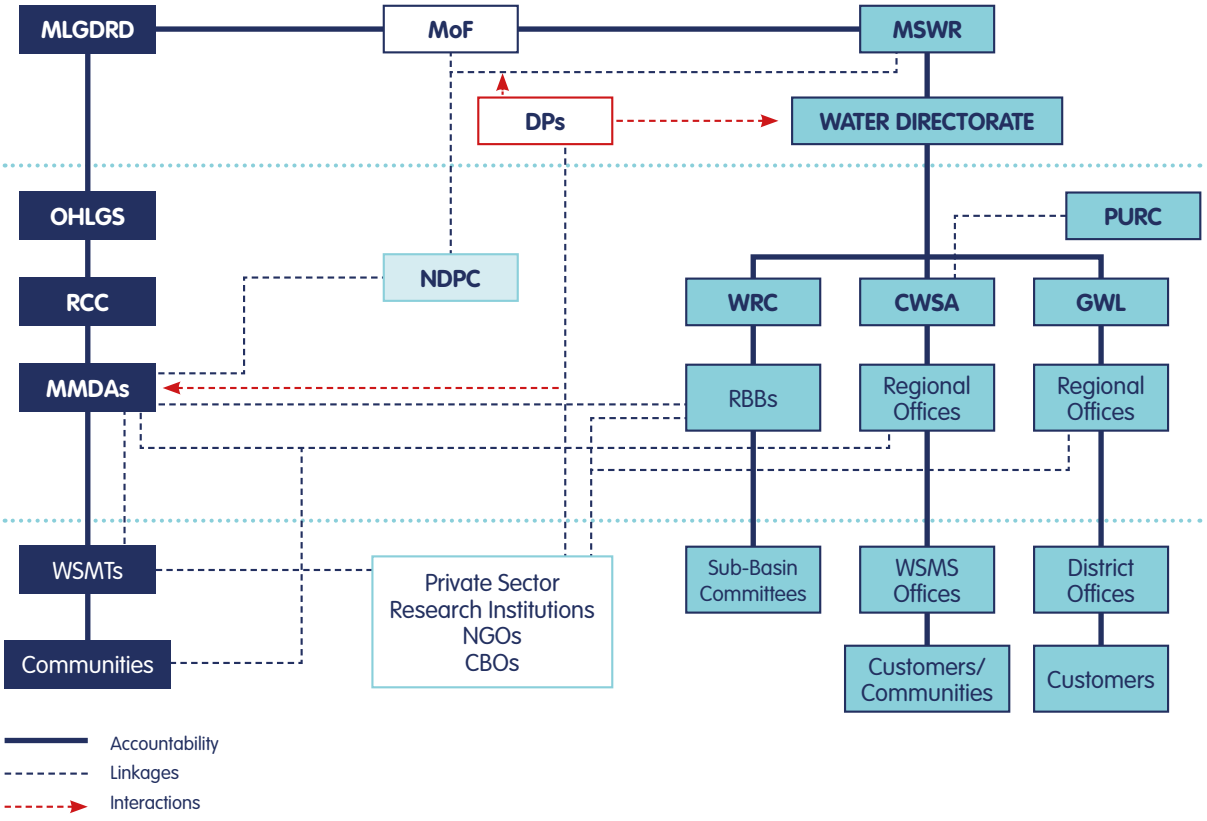
3.2 FUNCTIONS OF ALLIED SECTOR MINISTRIES AND AGENCIES

Other allied Ministries and Agencies involved in the use of water for other purposes, standards setting and regulation are:

Institution	Roles in Relation to Water
Ministry of Fisheries and Aquaculture Development	In charge of the fisheries sub-sector. Regulates both fresh water, marine fishing and aquaculture activities.
Ministry of Energy	In charge of the provision and supply of hydro-electric power generated through dams and impoundments.
Ministry of Transport	Responsible for the transportation of passengers and cargo on the Volta Lake. Regulate, monitor and co-ordinate activities relating to safety and security of the marine and inland waterways as well as the operation and maintenance of harbours.
Ministry of Health	Responsible for the formulation of health policies as well as the implementation of programmes relating to public health through the Ghana Health Service (GHS). Promotes WASH in Healthcare facilities through GHS.
Ministry of Finance	Responsible for the mobilisation of external resources and the administration and servicing of all public sector loans including those of the water sector.
Ministry of Local Government, Decentralisation and Rural Development	Has oversight responsibility of DAs who are the primary asset owners of rural water supply systems. Responsible for policy direction of the DAs within the framework of the Local Governance Act (Act 936), 2016 which mandates DAs to provide services including rural water facilities.
Ministry of Gender, Children and Social Protection	Responsible for the implementation of the National Gender policy (2015) which recognises the effects of inadequate water provision on the vulnerable as well as the role of women and children in water management and the conservation of water resources.
Ministry of Education (MoE)	Under its School Health Education Programme (SHEP), MoE through the Ghana Education Service (GES) undertakes school health and sanitation programmes through the formulation of strategies and implementation of WASH projects in schools.
Parliamentary Select Committee on Works and Housing	Mandated with legislative oversight and responsibilities of the water sector.
Ghana Tourism Authority	Oversight responsibility for water related tourism activities such as those on Lakes Volta and Bosomtwe.

Institution	Roles in Relation to Water
Ghana Irrigation Development Authority	Responsible for the formulation and implementation of plans towards the development of land and water resources for irrigation, crop production and livestock watering. Designing of irrigation infrastructure and related facilities as well as undertaking land-use planning around areas demarcated for irrigation development.
Ghana Standards Authority	Responsible for developing, publishing and promoting standards in the country including drinking water quality standards and certification of private water producers.
Land Use and Spatial Planning Authority	Ensure the control of physical development in uncontrolled or less controlled but sensitive areas such as coastal wetlands, water bodies, water catchment areas, forest and nature reserves and green belts.
Food and Drugs Authority	Government agency with regulatory oversight over the efficacy, quality and safety of food, drugs and other products (including bottled and sachet water) through the enforcement of relevant standards for the protection of public health.
Environmental Protection Agency (EPA)	The EPA Act (Act 490), 1994 mandates the Agency to be responsible for regulating the environment by protecting air, land and water for a healthier society. The Agency is responsible for setting standards on appropriate limits/amounts of effluents discharged into water bodies.
Ghana Meteorological Agency	Responsible for providing efficient and reliable meteorological information by collecting, processing, archiving and disseminating of same to end users.
Ghana Statistical Service	Responsible for the generation of data on the demographic and socio-economic (including data on water and sanitation) characteristics of the populace through the conduct of census and surveys. This data serves as the basis for monitoring and reporting Ghana's progress on relevant international commitments.
Hydrological Services Department	Responsible for the programming and coordination of coastal protection works, construction and maintenance of storm drains countrywide and the monitoring and evaluation of surface water bodies with regard to floods.
Water Research Institute (WRI)	WRI has a mandate to conduct research into water and related resources. WRI generates and provides scientific information, strategies and services towards the rational development, utilisation and management of the country's water resources.
National Disaster Management Organisation	Responsible for the prevention and management of both natural and manmade disasters (including those relating to water such as floods) through public education, providing material support in the face of disaster as well as undertaking response activities during epidemics.
National Development Planning Commission (NDPC)	Mandated by the NDPC Act (Act 479), 1994 and the National Development Planning (System) Act (Act 480), 1994 to develop the national medium- and long-term plans taking into consideration the country's resource potential. Make proposals for the protection of the natural and physical environment and undertake monitoring and evaluation of national and local level projects and policies.
Office of the Head of Local Government Service	Oversight responsibility for all District Assembly (DA) staff. Responsible for the recruitment, placement, promotion and capacity building of staff of all the decentralised departments of DAs.
Regional Coordinating Councils	Oversight responsibility for all DAs within their regions. The RCC is responsible for coordinating the plans and programmes of DAs as well as monitoring the progress of local level plans. The Regional Security Committees of the RCCs have a responsibility for the protection of water resources through the enforcement of the ban on small-scale illegal mining (Galamsey).

Institution	Roles in Relation to Water
District Assemblies	Represent the lowest level of governance responsible for the planning, implementation, operation, maintenance and monitoring of water and sanitation facilities in their jurisdiction. DAs are also responsible for the management of the general environment within the district. The Physical Planning Department of the DAs is responsible for overseeing the physical development of towns through the provision of land-use plans that direct the development of services like roads, drainage networks, electricity and water supply distribution lines.
Development Partners	Support government by providing financial resources and technical assistance for the establishment of institutions, development of legislation, project implementation, capacity building, aid coordination and management.
NGOs and CSOs	Under the canopy of the Coalition of NGOs in Water and Sanitation (CONIWAS), NGOs and CSOs engage in the implementation of water projects, undertake research activities, advocacy, knowledge sharing and demand for accountability.



MLGDRD	Ministry of Local Government, Decentralisation and Rural Development	**RBBs**	River Basin Boards
CWSA	Community Water and Sanitation Agency	**GWL**	Ghana Water Ltd.
MoF	Ministry of Finance	**NDPC**	National Development Planning Commission
MSWR	Ministry of Sanitation and Water Resources	**WSMS**	Water System Management Staff
OHLGS	Office of Head of Local Government Service	**WSMTs**	Water and Sanitation Management Teams
WRC	Water Resources Commission	**PURC**	Public Utilities Regulatory Commission
NGOs	Non-Governmental Organisations	**CBOs**	Community Based Organisations
DPs	Development Partners		

Source: Adapted from National Infrastructure Plan, 2017

FIGURE 2: INSTITUTIONAL ARRANGEMENT FOR POLICY IMPLEMENTATION

3.3 LEGAL AND REGULATORY FRAMEWORK

The water sector is driven by laws and regulations aimed at ensuring the effective coordination and management of uses of water resources in Ghana. These policies, laws and regulations are focused on water use activities, groundwater development, dam safety and buffer zone protection. Similarly, urban and rural water supply in Ghana is governed by laws, standards, regulations and guidelines pertaining to water quality, tariff setting and service delivery.

3.3.1 LEGAL FRAMEWORK

The effective implementation of the policy would require that clear legal frameworks are instituted for the realisation of policy objectives and actions. In this regard, MSWR, in concert with other stakeholders, should spearhead further activities to ensure crystallisation and eventual enactment as an Act of Parliament, a Water Services Bill. Key issues to be highlighted in the Bill are:

- mechanisms to enhance the governance of water supply;
- mechanisms to address weak coordination especially in the implementation of frameworks and strategies in the water sector;
- technical standards, code of practice and inspection of equipment by the relevant agencies;
- Regulation of the sector;
- Water asset ownership;
- Service delivery models;
- Delineation of service areas;
- Private sector regulation;
- Equity and inclusion issues.

MSWR shall also recommend the promulgation of additional legislation and the amendment of existing legislation where necessary to support the implementation of the policy. Such legislation and amendments shall recognise already existing legal frameworks, international commitments and agreements as well as customary and traditional laws and practices in Ghana for water conservation, pollution control and protection of fisheries and catchment areas.

3.3.1.1 OWNERSHIP AND PROTECTION OF WATER RESOURCES

The 1992 Constitution of the Republic of Ghana directs the state to set up Commissions for the management of its natural resources (Article 269). In fulfilment of this mandate, the Government of Ghana in 1996 established WRC through an Act of Parliament. Section 12 of the Act vests all water resources of Ghana in the President for and on behalf of the people. Given this, there is no private ownership of water resources in Ghana. However, the President through WRC grants water use rights. This provision is in tandem with the general management of all of the country's natural resources that ensures good governance and the utilisation of resources in a judicious way to meet current and future demands.

3.3.1.2 WATER FOR FISHERIES AND AQUACULTURE

The Marine Pollution Act, 2016 (Act 932) provides the legal framework for the prevention, control, response, preparedness, liability and compensation for pollution incidents. The Act also provides for the prevention and control of pollution to the environment from marine sources.

The Fisheries Amendment Act, 2014 (Act 880) provides for the development of the fishing industry and sustainable exploitation of fishery resources and related matters including regulation and licensing for

aquaculture and recreational fishing as well as correlating the fisheries sector with other water uses and environmental protection.

3.3.1.3 WATER FOR ENERGY (HYDRO-POWER)

The Bui Power Authority Act, 2007 (Act 740) established the Bui Power Authority with the mandate for the 'development of a hydro-electric power project on the Black Volta River at Bui and any other potential hydro-electric power sites on the Black Volta River and for related matters'.

The Volta River Development Act, 1961 (Act 46) established the Volta River Authority (VRA) with responsibility for (a) hydro-electric power generation on the Volta Lake, (b) construction and operation of a transmission system for its distribution within the country and to other neighbouring countries, (c) provision of facilities and assistance for the development of the lake for the purposes of fishing and (d) transportation as well as the administration of lands surrounding the lake.

3.3.1.4 WATER FOR TRANSPORT

The Ghana Maritime Authority (GMA) (Amendment) Act, 2011 (Act 825) places on the GMA the responsibility for the implementation of enactments on water transport and navigation including those of inland waterways as well as the general coordination of activities within the maritime industry.

The Volta Lake Transport Company (VLTC) which was created in 1970 as a subsidiary of VRA operates the largest inland waterway transport on the Volta Lake. VLTC is responsible for the operation of river transportation for passengers, bulk haulage of petroleum products and cement as well as cross-lake ferry services along the Volta Lake.

3.3.1.5 WATER FOR TOURISM

The Tourism Act, 2011 (Act 817) established the Ghana Tourism Authority with responsibility for issuing licenses and regulating the activities of tourism enterprises which include those related to water tourism.

3.3.2 REGULATORY FRAMEWORKS

3.3.2.1 WATER RESOURCES MANAGEMENT

The Dam Safety Regulations L.I. 2236 (2016) mandates WRC to ensure the safe design, construction, operation and maintenance as well as decommissioning of dams in the country. Key to the successful implementation of this regulation is the establishment of a National Dam Safety Unit. However, capacity constraints need to be addressed to ensure that the Unit is operational and functional.

There is also the Drilling License and Groundwater Development Regulations L.I. 1827 (2006) which mandates WRC to issue licenses to companies who prospect for and drill water wells, to regulate in an environmentally sustainable manner the development of Ghana's groundwater resources, to collect data on groundwater resource availability and exploitation for evidence-based planning and development.

Water Use Regulations L.I. 1692 (2001) mandates WRC to issue permits to water users for commercial, industrial, agricultural, power generation, fisheries (aquaculture), recreational, and underwater (wood) harvesting purposes. WRC is also mandated under this regulation to monitor as well as publish a yearly register of all water users who have been issued permits.

3.3.2.2 WATER FOR FOOD PRODUCTION

a. Water for Irrigation
   The Ghana Irrigation Development Authority (GIDA) is responsible for the formulation, development and implementation of irrigation and drainage plans to ensure all year-round agricultural production in Ghana. GIDA Regulations L.I. 1350 (1987) outlines the procedures for the management of irrigation projects including water management in such projects. The Technical Guidelines for Irrigated Agriculture (2004) further details the factors for effective management of water for irrigated agriculture including water supply, distribution and application management.

b. Water for Fisheries and Aquaculture
   The Fisheries (Amendment) Regulations L.I. 2217, 2015 mandates the Fisheries Commission to prepare fisheries management plans, issue permits for commercial aquaculture in accordance with environmental considerations and undertake regular monitoring and inspection of aquaculture establishments to ensure that they conform to standards.

3.3.2.3 URBAN WATER SERVICES

GWL as well as other private urban water service providers are regulated by law to ensure the provision of adequate goods, services and works. The service providers are required to obtain appropriate certification and are also expected to adhere to the requisite standards and procedures set by PURC, GWL, FDA and GSA as outlined below:

- Certificates of Incorporation and Commencement of Business
- Company Regulations
- Private Sector Participation Contract Framework
- Urban Water Tariff Policy
- Tariff Schedules
- Specifications (Terms of Reference for the supply of goods, services and works pertaining to projects)
- Manuals and Guidelines on Operationalising and Implementing Projects
- Tanker Services Guidelines

3.3.2.4 COMMUNITY WATER SERVICES

Water services from small town piped water systems under CWSA's utility model shall meet the standards set by PURC in its manuals and guidelines[18]. In the interim, other piped systems outside the CWSA utility model shall be subjected to the standards determined by CWSA. With respect to services provided from point sources, beneficiary communities shall subject themselves to periodic monitoring and regulation by DAs. The CWSA and PURC standards and manuals include:

- CWSA Act, 1998 (Act 564)
- Strategic Investment Plan
- Specifications (for construction of boreholes and hand-dug wells, standards for small towns, and Terms of Reference for the supply of goods, services and works pertaining to projects)
- District Operational Manual (DOM)
- Community Operational Manual (COM)

18. With the transition of CWSA to a rural water utility, existing legislation, manuals and guidelines will need to be revised and new ones developed to reflect the reforms.

- Monitoring of Maintenance (MoM) guidelines and strategies
- Project Implementation Manual
- Procurement Manual and Public Procurement Act (Act 663) 2003 (as amended with Act 914, 2016)
- Certificates of Incorporation and Commencement of Business
- Company Regulations
- Private Sector Participation Contract Framework
- Water Tariff Policy
- Tariff Schedules
- Specifications (Terms of Reference for the supply of goods, services and works pertaining to projects)
- Manuals and Guidelines on Operationalising and Implementing Projects
- Tanker Services Guidelines

3.4 INTERFACING ISSUES

a. Interface between GWL and CWSA in Water Supply Management
   MSWR shall facilitate the development of guidelines that set out the parameters for determining which communities qualify to be under the management of either of the two respective utilities as well as delineating clearly the service lines/areas and boundaries of GWL and CWSA in water supply.

   CWSA and GWL shall collaborate strongly with a view to developing a mechanism where rural communities and small towns can benefit from water supplied through GWL managed systems especially when such communities are situated close to the abstraction point of water or service lines are directly passing through the community. This shall be relevant in instances where water supply can play a key role in creating growth poles and supporting economic development in a small town or a rural community that is able and willing to pay the tariffs of GWL.

b. Interface between CWSA, MLGDRD and OHLGS
   MLGDRD as well as OHLGS are key institutions in the CWSA reforms. Since CWSA would continue to play a facilitative role in the delivery of point source water facilities, district level staff and WSMTs shall be in charge of the management of such facilities. Further, it is recognised that during the initial stages of implementing the NCWSP, some communities and DAs contributed 5% of the capital cost of their water systems. This implies that such communities and DAs have equity and an interest in the management of such systems. On account of this, there shall be further interfacing among the above-mentioned institutions as to what the role of such DAs and communities would be in the management of their small town water systems under CWSA's utility model and any other models determined by MSWR.

c. Management of piped systems outside CWSA's utility model
   To pre-empt the paradox of running the utility model alongside community ownership and management, the policy shall focus on determining the feasibility of other management models including public-private partnerships for the remaining piped systems to augment the gap. To facilitate this, MSWR in consultation with key stakeholders shall determine the parameters/criteria for eligible organisations.

3.5 COORDINATION AND COLLABORATION

Coordination and collaboration among sector agencies, NGOs/CSOs, development partners and all other stakeholders is key to ensuring the effective implementation of the revised NWP at all levels of governance.

The Water and Sanitation Sector Working Group (WSSWG) which is composed of key stakeholders would be responsible for coordination and collaboration. The WSSWG would provide effective direction and ensure coordination of the routine planning and implementation of activities in the sector. The Terms of Reference and composition of the main and sub-groups of the WSSWG would be reviewed periodically.

MSWR shall continue to prepare the Water and Sanitation Sector Performance Report which would provide a means of monitoring the overall status of and trends in the sector as well as sector progress towards the attainment of SDG 6.

To facilitate exchange of ideas, deepen knowledge management and identify and coordinate implementation challenges, MSWR shall continue the organisation of its Annual Sector Review meetings to serve as a useful platform for policy makers, practitioners, academics, CSOs/NGOs and other relevant stakeholders to deliberate on the sector.

The three implementing agencies (WRC, GWL and CWSA) of MSWR shall continue to prepare and harmonise their sector plans for inclusion in the overall Medium-Term Development Plan of the Ministry.

At the regional and district levels, coordination and collaboration shall be ensured through periodic review of the status of implementation of the WASH components of the District Medium-Term Development Plan (DMTDP) by members of the Regional Planning Coordinating Units (RPCUs) and District Planning Coordinating Units (DPCUs) respectively. To keep track of performance towards attaining SDG 6 at the local level and ensure conformity through a coordinated approach in implementation of the NWP, the RPCUs and DPCUs shall facilitate annual sector review workshops. These review workshops will identify challenges or bottlenecks hindering the smooth implementation of DA water and sanitation plans within the framework of the revised NWP. The successful implementation of these review workshops is contingent on an effective collaboration between MSWR and MLGDRD/OHLGS who exercise policy and implementation oversight over the RCCs and DAs. Indeed, collaboration through an enhanced and sustained interface with MLGDRD/OHLGS is central to the effective implementation of the NWP particularly at the local level.

3.6 INTER-MINISTERIAL COLLABORATION FOR WASH SERVICES

As already mentioned, water has linkages with a number of sectors. The Ministry of Education through the Ghana Education Service (GES) is responsible for ensuring that schools have safe drinking water and toilets equipped with hand washing facilities. Also GES has rolled out the School Health Education Programme (SHEP) which seeks among other things to (i) inculcate into school children health-promoting habits and values of good hygiene and sanitation practices including hand washing with soap, (ii) promote the provision of adequate, safe and sustainable water and sanitation facilities in schools which are gender, child and disability friendly and (iii) promote good environmental sanitation and hygiene practices in schools which reinforce the practice of learnt skills for hygiene. These functions are critical as availability of adequate WASH facilities in schools ensure improved learning outcomes and retention of school children.

The Ministry of Health through the Ghana Health Service (GHS) is also responsible for implementing healthcare policies as well as the administration of health services provided by the government which includes ensuring that there is access to water in all healthcare facilities. Provision of around the clock running water in health facilities is key for effective health service delivery.

To promote effective coordination, MSWR shall collaborate with the Ministries of Education and Health for policy making, planning, funding and implementation of holistic interventions with respect to water provision in schools and health facilities. This will result in proper identification of roles, buy-in and ownership, appropriate monitoring, reporting and sustainability of the facilities.

3.7 POLICY REVIEW

The NWP shall be regularly reviewed to track performance and put in place measures to overcome challenges with implementation. Led by MSWR, the review of the policy will adopt a multi-stakeholder approach involving water sector related ministries, user agencies, DAs, universities, research institutions, professional bodies and non-governmental organisations among others.

DEFINITION OF TERMS

Advocacy	Creating awareness and getting the commitment of decision makers for a social cause.
Agricultural Water Use	The use of water to enhance agricultural output by means of irrigation or the use of water to sustain livestock.
Aquifer	Underground layers of porous rock that are saturated with water from above or from structures sloping towards it.
Coastal Zone	Lands and water adjacent to the coasts that exert an influence on the use of the sea and its ecology, or whose uses and ecology are affected by the sea. The term "coastal zone" means the coastal water (including the lands therein and there-under) and the adjacent shorelands (including the waters therein and there-under).
Community	Includes groups of individuals living in close proximity to each other and/ or other social groups, grassroots entrepreneurs or associations able to identify a need and come together to access project funds. The size of the community varies depending on the type of project intervention and includes people from all areas that make direct use of the project.
Community Water Services	A branch of the water sector that deals with the provision of safe water and related sanitation services in rural communities and small towns.
Consumptive Use	Using any mechanical means to withdraw water from ponds, lakes, rivers, streams or aquifers, dams/reservoirs etc. for purposes such as mining, aquaculture (pond and hatchery), construction etc.
District Assembly	A local government authority organised in accordance with the Constitution and laws of Ghana, and the Local Governance Act, 2016 (Act 963), which is responsible for planning and implementing all development projects within its jurisdiction and regulated by the appropriate Act of Parliament in the form of legislative instruments.
Degradation of Water Quality	A decrease in quality, which makes water unsuitable for specific uses.
Demand Responsive	The provision of water and sanitation services to meet specific
Approach	locality requirements based on effective demand by communities actively seeking to improve these services.

Domestic Water Use	The use of water for household purposes and personal hygiene.
Drinking Water Quality	A term used to describe the chemical, physical, and biological characteristics of water, usually relating to its suitability for drinking. The level of water quality is based on the evaluation of measured quantities.
Effluent Discharge	Fluids such as municipal sewage and industrial liquid waste (untreated, partially treated, or completely treated), which flows out of a treatment plant, sewer, industrial or domestic outlets. Generally, it refers to wastes discharged into surface waters.
Effluent Standard	The maximum amounts of specific pollutants allowable in wastewater discharged by an industrial facility or wastewater treatment plant. The standards are set for individual pollutants and apply across all industrial categories.
Environmental Flow	Flows, or characteristics of the flow pattern, which are either protected or created for an environmental purpose and provided within a river, wetland or coastal zone to maintain ecosystems and their benefits where there are competing water uses and where flows are regulated.
Environmental Management	The processes and systems for dealing with the environmental effects of development.
Environmental Impact	Detailed studies, which predict the effects of a development
Assessment	project on the environment and provide plans for mitigation of adverse impacts.
Environmental Sanitation	The ongoing management, operation and maintenance of the removal and disposal of liquid and solid wastes from all premises and their surroundings as well as their disposal in a way that does not cause harm to either people's health or the environment.
Environmental Water Use	The release or maintenance of a certain level or flow of water for the purpose of maintaining specific environmental and recreational purposes.
Food Security	There is food security when all persons obtain a nutritionally adequate, culturally acceptable, affordable and adequate quality of diet at all times through local non-emergency sources, when they have safe and nutritious food available to them at all times.
Fisheries Water Use	The release or maintenance of a certain flow of water for the purpose of meeting the needs of aquaculture or fisheries activities.

Gender Sensitivity and Mainstreaming	The process of ensuring that policy formulation, project development and monitoring are gender sensitive by integrating and institutionalising gender issues in policies, plans and programmes.
Good Governance	The adherence to subsidiarity for assuring transparent and accountable decision-making in planning of investments, implementation and management of water and sanitation services involving all stakeholders.
Groundwater	Sub-surface water in a saturation zone below the surface of the earth, often in naturally occurring reservoirs in permeable rock strata or aquifer; the source for wells and natural springs.
Groundwater Recharge	Inflow of water to aquifer systems from the surface through infiltration of precipitation and its movement to the water table.
Health Education	The teaching of ways of developing healthy practices as part of health promotion.
Hygiene Education	The process of developing and teaching hygienic practices as part of health promotion including providing teaching and learning materials as well as supporting information, education and communication for awareness creation on the effects of poor hygiene. The aim is behaviour change for maintaining personal hygiene and cleanliness of facilities and surroundings.
Industrial Use	The use of water by major non-municipal industrial establishments.
Integrated Water Resources Management	The perception of water as an integral part of the ecosystem and other natural resources, and a social and economic good, whose quantity and quality determine the nature of its utilisation.
Level of Service	A specified type of water and sanitation service appropriate for meeting the health and welfare (including environmental considerations) needs of a targeted community. The services are provided relying on effective demand by communities.
Municipal Water Use	The diversion, treatment, and distribution of water by a water supply utility to satisfy a range of domestic and non-domestic demands within a given municipality.
Pollutant	Any substance when introduced into the environment in excess quantities of the natural background concentrations, adversely affects the usefulness of a resource or the health of humans, animals, or ecosystems.
Pollution	In relation to a water resource, this means any direct or indirect alteration of the physical, thermal, chemical or biological properties of the water resource so as to make it less fit for any beneficial purpose for which it is or may

	reasonably be expected to be used, or harmful to the welfare, health or safety of human beings, any aquatic or non-aquatic property or the environment.
Potable/Safe Water	Water of specified quality standard meant for drinking purposes.
Power Generation Water Use	The use of hydraulic potential of water for the generation of power by diverting it through penstocks and turbines.
Rainwater Harvesting	The collection of rainwater for use in growing crops and for other human use. It's done through run-off harvesting or roof water harvesting.
Raw Water Quality	A term used to describe the chemical, physical, and biological characteristics of untreated water, usually in respect to its suitability for a particular purpose.
Recreational Water Use	The use of water for activities such as swimming, boating, surfing etc.
Riparian Habitat	The dynamic complex of plant, animal and micro-organism communities and their non-living environment adjacent to and associated with a watercourse.
River Basin	The land area drained by a river and its tributaries or the land area surrounding one river from its headwaters to its mouth.
Rural Community	Community with a population of less than 5,000 people or any other figure which the Minister of Sanitation and Water Resources, in consultation with appropriate government agencies, may from time to time declare by publication in the Gazette and the mass media.
Sanitation	Control of physical factors in the human environment that could harm development, health, or survival. In reference to services provided by CWSA and GWL, sanitation is limited to hygiene behaviour and disposal of faecal matter as they affect water usage.
Sinking Fund	Money accumulated on a regular basis in a separate custodial account that is used to redeem debt securities or preferred stock issues. Also, a Sinking Fund may be established to finance the anticipated future purchase of capital assets.
Small Town	A community that is not rural but is a small urban community, with population between 2,000 to 30,000, the management of whose water system would be under CWSA.
Spring	Water emerging from beneath the surface of the ground otherwise than as a result of drilling or excavation operations.
Strategic Environmental Assessment	Systematic evaluation of the environmental effects of policies, plans and programmes.

Subsidiarity Principle	The management of water and sanitation services at the lowest appropriate level, with users involved in the planning and implementation of projects.
Surface Water	Water that sits or flows above the earth's surface, including lakes, oceans, rivers, streams, wetlands and in reservoirs constructed by man.
Sustainability (of Systems)	The continued use of water and sanitation services, including its maintenance, throughout the design life of the system, of structural and functional condition of installed facilities, preservation of prescribed quantity and quality of water, taste and colour, and reliable follow-up support (O&M) from service providers and beneficiaries.
Water Demand	The quantity and quality of water consumers (including communities) will choose to consume at a given price (including valued resources such as time or labour given in exchange of service).
Water Resources	A general term encompassing the concepts of availability (the location, spatial distribution, or natural fluctuations of water); accessibility (given availability, whether consumers can have water or can afford water in adequate quantities); and quality (whether accessed water is free of contaminants and safe for consumption).
Water and Sanitation Management Team	A committee established for planning and implementation oversight of water and sanitation systems constructed for a community.
Water as "Social and Economic Good"	Water provides for meeting a number of societal objectives including improving health, poverty alleviation and employment generation. Water has also an economic value depending upon users and the use to which it is put as in domestic supplies, industry, agriculture, and hydropower. There are also environmental benefits as in preserving wildlife, flora and fauna. For sustainable use (including meeting demands of future generations) all these dimensions of water use need to be balanced.
Water Supply Reliability	The degree of certainty with which water is supplied, in addition to quantity and quality, for specified uses. Reliability standards vary among use classes: for reasons of health and sanitation water supply reliability is set higher for domestic supplies than for other uses.
Water Transportation	The use of water for navigation relies on the buoyancy of water.
Water Use	Taking advantage of water, either as a physical substance or as a water body, to meet any demand.
Wetlands	Seasonal or permanent waterlogged areas which generally include swamps, marshes, floodlands, estuaries, deltas, mangroves, lagoons etc.